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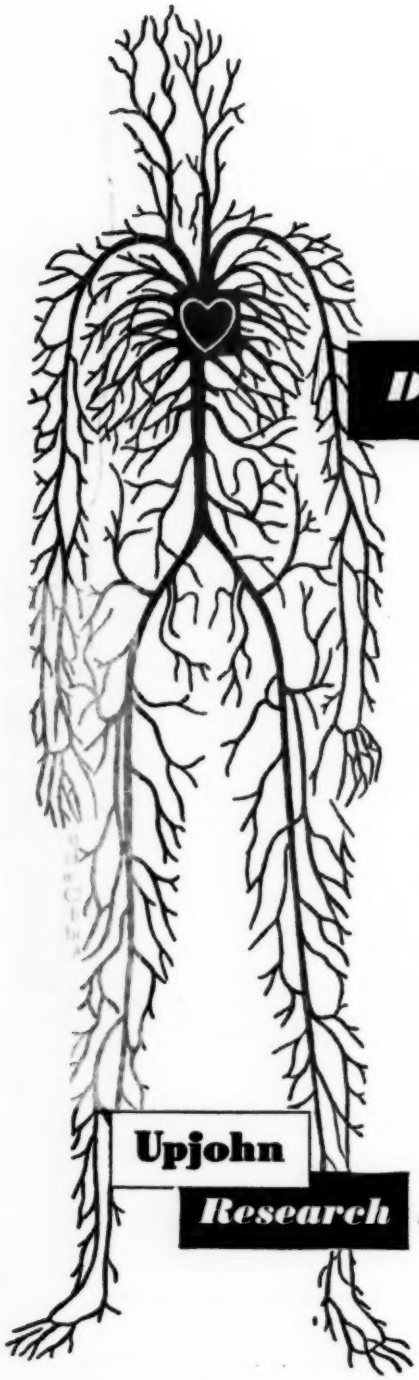

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# Radioisotopes In Medicine

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Contrary to the general impression, the use of radioisotopes in medicine pre-dates the invention of the atom bomb by a number of years. However, when these materials were made entirely by the cyclotron they were available in such minute quantities that only a few of the large institutions had access to them. Now, however, since the Nuclear Reactor also known as the Uranium Pile has been in general use in Oak Ridge, the enormous power of this instrument for making radioisotopes has opened up entirely new avenues of research.

Suffice it to say the radioisotope of an ordinary element such as iron, phosphorus or carbon has every chemical and physical property as the common form of the element, but in addition has the property of throwing off particles or rays which are capable of being detected by a number of different instruments. This enables the experimental worker to use an atom which is tagged so that he can readily identify it wherever he comes across it in biological material, living or dead. Differing from Radium these materials do not continue to give off radiation for long periods of time, but in a relatively short time lose that property. The half-life of the different isotopes varies from a few seconds to many years which fact enables the experimental worker to choose that isotope which has suitably lasting qualities for the purpose, but at the same time has a sufficiently rapid decay so that the animal or human being studied is in no danger of harmful radiation.

The detection of radioisotopes in the human body, experimental animal, biopsied specimen or excreted specimen falls largely into two classes. The first and simplest method of detection is to make use of the radioautograph in which the biopsied material containing the tracer element is placed in close contact with a photographic film and allowed to remain for a number of hours. The subsequent development by ordinary photographic methods shows a blackening in the shape of the distribution of the radioactive material. As exposures are extremely long by this method it is impractical on living tissue but it is highly satisfactory on microscopic sections where the exact cells containing the radioactive material may be seen and studied microscopically.

The Geiger counter which is enormously sensitive and immediately indicative of the presence of radioactive material can adapt itself to the location of radioactive material wherever it may happen to be. This instrument consists of a partly evacuated tube into which any radiation causes a slight conductivity across the electrodes. This burst of conductivity may be amplified by radio tubes so that the pulses may be made to indicate themselves by audible or visual signals. In many cases these pulses are so rapid that it would be impossible to count them so use is made of what is known as a scaling circuit whereby only one out of ten is registered and by a series of such systems it becomes possible to count every 100th or 1000th on a mechanical register.

In medicine the use of radioisotopes falls roughly into three characteristics. First those which have a specific affinity for any part of the body; in which class radio-iodine is a fine example inasmuch as practically all iodine used in the body is stored in the thyroid gland, and the radioiodine acts the same as ordinary iodine, enabling quantities of iodine too small for chemists to locate, to be traced with perfect ease in and out of the thyroid gland. The second class may be called those with semi-specific action such as phosphorus. As it is well known that phosphorus has a tendency to accummulate in rapidly growing tissue to a greater degree than in static tissue, it has a tendency to accumulate slightly more in malignant tissue than in normal tissue. This property in many instances enables a node to be differentiated from malignant or benign by the use of a tracer dose of radiophosphorus and to be accurately located by the Geiger counter. The third class are those which show no specific affinity for any of the body parts such as

carbon in which case many ordinary materials, drugs as well as foods, may be synthetized to contain small amounts of radio-carbon mixed in with ordinary carbon wherein a survey of a part of the body or an experimental animal proves beyond all question the location and absorption of this particular drug or medicine.

The examination of the thyroid by radioiodine offers many advantages over the basal metabolic rate test at it discloses fairly accurately the amount of iodine which the thyroid is able to pick up as well as the exact location of thyroid tissue either normal or abnormal. Having given a known dose of radioiodine the percentage which remains in the gland 24 hours later can be readily determined by the Geiger counter placed near the thyroid, and an additional check is gotten on this by the determination of the percentage of iodine in each specimen of urine excreted in the first 24 hours. A sub-sternal thyroid or a lingual thyroid is readily located even when the amount of tissue is too small to be determined by X-ray examination. In one case recently under our observation, a patient has a lingual thyroid and absolutely no other thyroid tissue in the neck or elsewhere.

In the isotope laboratory of the Medical College of the State of South Carolina only two isotopes are in general use—iodine and phosphorus, but regular shipments are received each month from the nuclear reactor at Oak Ridge. Radiophosphorus has a half-life of 14 days and radioiodine a half-life of 8 days, for which reason it is necessary to get frequent shipments to have a sufficiency on hand when needed.

In addition to using these materials as tracers they are also used as a means of treatment, being an adjunct and not necessarily a substitute for external radiation by X-ray or radium. Certain types of malignancy, more particularly the polycethemia rubra and the leukemias in many instances respond better to isotype therapy where an extremely small dose is continued for a long time, the cells actually being radiated by the atoms of which they are composed. In many instances the patient with leukemia or Hodgkin's Disease who no longer responds favorably to the use of external radiation can often be given a large measure of relief and comfort, over a considerable time.

It was hoped at the beginning that an isotope such as radiophosphorus could be used successfully to treat advanced malignancies on the assumption that those parts of the body containing cancer would concentrate the radiophosphorus more heavily. This has not worked out as first expected. As a number of exhaustive case reports have shown that many patients with extensive metastases could be slightly improved and made more comfortable, but the final outcome showed little change.

At the present time about 6 radioisotopes are in common clinical and experimental use whereas approximately 1000 radioisotopes are known. To determine which of these may become valuable clinical weapons is a problem now being undertaken by the Medical Division of the Oak Ridge Institute of Nuclear Studies. A small but very completely equipped hospital is now being set up in Oak Ridge where about 35 cancer patients will be attended. Each of these patients comes in of course, with his own permission and understanding, but only on the recommendation of an authority of one of the medical schools in this district. It is firmly believed that much valuable information will come out of this project.

The isotope laboratory here at the Medical College is desirous of cooperating with all clinicians and research workers in the use of these materials and, for the present, at least, is willing to supply these materials without cost to the patient or doctor in any case where, in the opinion of the director, either the patient may be benefitted or valuable information gained. A large number of cases have been treated and tested in Charleston in the last year and a half, and in a number of cases the materials have been shipped by us to other cities in the state.

# Thyroid Diseases

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## I

Members and guests of the Alumni Post-Graduate Seminar, it is indeed an honor and a rather tingling pleasure to address you on the subject of the Thyroid. I happen to come from Boston where we are having a revolution in regard to the treatment of thyroid diseases—but such action is well known to South Carolina—the state in which the greatest number of battles were fought in our own American revolution and one that still stands for independence. But let us turn our attention to the thyroid, its function and its treatment when disordered.

First about the iodine deficient goiter or what has been called the colloid or simple goiter.

I would like to follow a chronological order in this story and so quite properly start with the year 1811. In that year the English Navy's effective blockade had cut off Napoleon's supply of Chilean salt peter. The French scientists were thus set to work to find a substitute. Courtois,[1] a chemical manufacturer, soon discovered the black scales of iodine from sea weed. Medical men were quick to recognize this element as the active ingredient in material that had long been used in the treatment of goiter. By 1821 Coindet[2] reported treating his patients with iodine. Scientific analyses that revealed the iodine deficiencies in the water and soil that lay behind this simple type of goiter were beautifully done in the years 1850-1870 by Chatin[3] but his work was repudiated by the French Academy. Desolate years of confusion followed and then Baumann[4] in 1895 reawakened interest by his discovery of iodine in the thyroid. Not only that but with his simple classic experiments he established the avidity that the thyroid holds for iodine. This selective trapping of iodine by the thyroid marks a tissue characteristic that has been most useful in the revelation of physiologic processes and one that scientists, now with isotopes, seek in other tissues.

Iodine ingested is soon caught in the thyroid and in a matter of hours it becomes inorganic iodine and in the following hours or days it is largely converted into the organic form. Just what biochemical reactions occur to finally produce the active thyroid hormone has been a matter of a great deal of hard work, and an almost equal amount of conjecture by iatrochemists from Baumann down to Charles R. Harington and W. T. Salter.[5]

The isolation of crystalline thyroxine on Christmas Day of 1914 by Kendall of the Mayo Clinic marked a great discovery. Now we consider that the thyroid hormone is stored in characteristic colloid form containing at least two iodine-bearing amino acids, diiodotyrosine and thyroxine. Studies on the fate of thyroxine in body tissues have recently engaged LeBlond and Gross.[6] They have found that about 1% of radio labelled thyroxine can be recovered from heart muscle, a fact that suggests a direct mechanism of cardiac irritability in thyrotoxicosis.

The essential point is that sufficient iodine has to be supplied to this iodine hungry thyroid in order to have it produce an amount of this hormone needed to maintain normal metabolic processes. When a deficiency occurs then the gland enlarges. It has been estimated that the adult man requires about 100-200 micrograms of iodine per day.

While studying an outbreak of goiter in a fish hatchery in Pennsylvania in 1909, Marine and Lenhart[7] found that the addition of small amounts of iodine to the water caused such goiters to disappear. After painstaking research that defined the reaction of the thyroid to iodine, Marine was ready to conduct his now famous human experiments of 1917 on the school children of Akron, Ohio. Subsequent animal experimentation has shown that the deficiency in iodine may be relative and that the size of the goiter bears a direct relation to the degree of the deficiency.

Thus, it has taken over one hundred years of human effort to establish the need for iodine prophylaxis against the iodine deficient goiter. But as a national health measure this knowledge did not receive enough impetus to reach our Congress until 1947 when a bill was introduced to require that manufactured table salt contains not less than 75, and not more than 150 parts of iodine as iodide for each million parts of salt. However, no action was taken on this important health measure; the progress in human welfare is slow.

It was while I was a student at the Johns Hopkins in 1928 that the astute observations of Chesney, Clawson, and Webster[8] established the fact of a new type of goitrogen. They observed that rabbits fed on cabbage developed goiters. The cyanate ion was implicated and it was soon found that iodine added to the same cabbage diet prevented the formation of the rabbit goiters. In 1936 the cyanate ion was identified as the cause of goiters in hypertensive patients treated with potassium thiocyanate. Recent researches of Astwood[9] and his co-workers have in part explained the cyanate reaction as inhibiting preferential iodide concentration by thyroid tissue and even causing discharge of iodide from the thyroid. Thus, in effect,

(Presented at Post-graduate Seminar, Charleston, Nov. 1949).

another type of iodine deficient goiter is produced by the cyanate ion.

The McKenzies and McCollum[10] studied the goitrogenic effects of sulfaguanidine in rats and soon after this Richter and Clisby,[11] in searching for a better rat poison, discovered that Phenyl Thiourea caused hyperplasia of the thyroid. It was these observations[12] that formed a background for Astwood's introduction in 1943 of drugs of the thiouracil series as inhibitors of thyroid function. However, his recent researches on the mechanism of action of the thiouracil type drugs has shown that, unlike the cyanate ion, their effect is to block the conversion of iodine in the thyroid into organically bound iodine. Thus, the synthesis of the hormone is blocked by thiouracil type drugs.

II

Now that we have very briefly surveyed some facts about the goiters that are produced from a deficiency of iodine and usually associated with a decrease in thyroid hormone production, we may turn to consider the very opposite disorder. Let us now review some of the features of hyperthyroidism and the goiter that is producing an excessive amount of thyroid hormone.

The diagnosis of hyperthyroidism or Graves' disease (it was first described by Robert Graves of Dublin but Osler tried to give credit to Parry, a physician of Bath, England) appears to most students to be an easy matter. The clinical signs which are most clearly attributable to an increased production of thyroid hormone are an increased pulse rate, loss of weight (especially when associated with an increased appetite), myasthenia, a hypersensitivity to warmth, and increased tolerance for cold and usually a degree of nervousness previously unknown to the patient. Curiously these nervous manifestations may include headaches, abdominal pain, alopecia, tremor, or frank depressions.

The degree of exophthalmos seems not always related to the degree of hyperthyroidism. Indeed, one may find that progressive exophthalmos is accompanied by a minus basal metabolic rate. This dissociation of the eye disorder and the other signs of Graves' disease has proved to be one of our most baffling present day problems.

As you well know the true cause of hyperthyroidism is unknown and yet we think we understand its end results—except for exophthalmos. Several theories have been advanced and yet we await investigation by means of techniques not yet perfected. It is known that extracts of the anterior pituitary containing Thyrotrophin (T.S.H.) have produced exophthalmos in normal animals and birds; this has been done in animals with and without their thyroids. Injections of thyrotrophin into patients having what Mulvany[13] has classified as "thyrotrophic exophthalmos" have resulted in a drastic change for the worse with malignant exophthalmos causing loss of the eyes. Woods[14] at Johns Hopkins has observed thyrotoxic patients who lost both eyes and yet the orbital contents continued to grow and bulge out between the eyelids. What part of thyroid disease is this? I am sure we do not know. But here is a challenge to you students. We need a method of assay of the thyrotrophic hormone that can be applied to patients.

And now a word about the diagnostic techniques of the clinician. The clinical approach in which the physician looks quickly at the eyes, neck, and feels the warm tremulous hand and rapid pulse of the thyrotoxic patient, was augmented by the introduction, about 1914, of the bedside method of determining the basal metabolic rate. Today we have other and more exact methods of measuring thyroid function. I should like now to discuss three of these new techniques.

FIRST, THE INACTIVATION OF THYROTROPHIN BY THYROID TISSUE. Cope, Rawson, and McArthur[15] in their studies of the hyperfunctioning single adenoma clearly differentiated the hyperplastic tissue from the paranodular atrophic thyroid by means of this procedure. At operation a slice of thyroid tissue is obtained and incubated in a substance containing thyrotrophin (thyroid stimulating hormone) for 24 hours. After removal of the thyroid tissue the residual activity of the thyrothrophin is measured by injection of the substrate in baby chicks and then observing the effect upon the average height of their thyroid cells. This chick assay method was suggested by Smelser but was really developed in England by Cuthbert L. Cope[16] because the normal rats thyroid is in a state of hyperplasia.

A controversy had been carried on for over a quarter of a century as to whether the single nodule in the thyroid could produce hyperthyroidism and yet it was not until 1946 that Plummer's original concept was confirmed by Oliver Cope's studies in our Clinic involving the use of this method of thyrotrophin inactivation.

SECOND, THE DETERMINATION OF THE BLOOD PROTEIN BOUND IODINE. This procedure is difficult and time consuming but if available to the clinician it provides one of the most accurate indices of thyroid hormone in the circulation. In the past three years Douglas Riggs[17] has applied these observations to a wide variety of thyroid diseases in our clinic. The results indicate that the normal values by the method of Man and Riggs range from 3.5 to 7.5 gamma per cent. Higher values suggest hyperthyroidism while lower values support a diagnosis of myxedema.

Falsely high values of Protein Bound Iodine may persist for many months after the use of iodine dyes in roentgen visualization of the gall bladder, bronchi, or central nervous system. Rapid elimination of the intravenous dye for pyelography makes this only a transient source of error. False high values after iodine medication may be avoided by a washing out

process in the method.

Recent observations of Man[18] on the Protein Bound Iodine levels in women during pregnancy have shed light not only on the association of goiter in pregnancy but also on the relationship of thyroid function to fetal disasters. She has shown that a rise in blood iodine in the first trimester of pregnancy is a physiologic function and in those mothers who failed to have this response that there was a high incidence of miscarriage. When the serum iodine level is not so elevated, imminent miscarriage may be prevented by the administration of thyroid. Here then is another clue in our studies of the relation of the thyroid to the total well being of the body.

The third and last new method we have to estimate thyroid function is by use of radioactive iodine, the isotope $I^{131}$.

In 1937 a cooperative investigation of thyroid physiology with radioactive isotopes was started in the Physics Department of the Massachusetts Institute of Technology and the Thyroid Clinic of the Massachusetts General Hospital. Hertz, Roberts and Evans[19] soon demonstrated that the normal thyroid collects far greater amounts of radio tagged iodine than does other tissues. Later Hertz, Roberts, and Salter[20] reported that in Graves' disease the thyroid collects as much as 80 per cent of a small dose of radioactive iodine given by mouth. The use of this small dose that could be traced to the thyroid by means of the Geiger-Muller counter placed over the neck has added to the list of tracer elements. Tracer doses of $I^{131}$ provide decisive evidence for the diagnosis of Graves' disease and in evaluating whether the thyroid is in a normal, resting, or atrophic state. The tracer dose test may be of equal value to exclude the presence of hyperthyroidism in patients exhibiting hypermetabolism due to alcoholism, anxiety, compensated hypertensive heart disease or Parkinsonism.

The standard procedure in our clinic has been to give by mouth 100 microcuries of the 8-day isotope in 99 cc of a water solution and save 1 cc for the standard for later measurements of the activity in the urine which is collected for the two following days in 24 hour amounts. At the end of 48 hours the gamma rays emanating from the thyroid are counted by the Geiger Counter placed over the thyroid, and this activity compared with a 100 cc flask containing a similar dose given the patient. Other areas of the body may then be explored for possible collections of activity as in this way aberrant tissue such as struma ovarii or functioning tumor metastases may be detected.

One assumes that all the tagged iodine is either in the thyroid or else in the urine. The index of thyroid function then is estimated by either the amount collected in the thyroid or by the amount excreted in the urine. Thus some refer to the test as a radio-iodine tolerance test or a radio-iodine excretion test,—depending on the particular end point measured. Skanse[21] has recently obtained good correlation of these observations in normals, those thyrotoxic with diffuse hyperplasia and in the myxedematous. The pattern of radio-iodine uptake in the toxic nodular goiter may be quite different than in the diffusely hyperplastic gland and likewise the total uptake or urinary excretion may be within the normal range when the patient is clinically thyrotoxic.

Pattern of T Radio-iodine Excretion in Tracer Doses.

Thyrotoxic —urine excretion of $I^{131}$, 48 hours — 20% (Average)

Normal —urine excretion of $I^{131}$, 48 hours — 66% (Average)

Myxedema —urine excretion of $I^{131}$, 48 hours — 84% (Average), with a characteristic high second day excretion.

Delay in renal excretion of radioactive iodine may occur in nephritis, or in other forms of pre-renal deviation with a normal thyroid function. This delay in excretion may suggest hyperfunction of the thyroid but analysis of the curve of elimination reveals the true difference. Likewise, a high excretion of radioactive iodine may occur in the presence of iodine saturation and so thyrotoxic patients must be free of Iodine medication about three weeks before tracer or therapy doses. For these determinations of radioactivity the physician is dependent on the physicist and the technician trained in bio-physics.

The hyperplastic thyroid is manufacturing greater amounts of hormone and so has an increased avidity for iodine, either plain or radio-active. Thyroids made hyperplastic by goitrogens or those receiving thiouracil may collect much less radio-iodine as these agents block the uptake of iodine by the thyroid. This block is of short duration as four days after the omission of a thiouracil type drug in thyrotoxic patients, the thyroid again collects practically the same amount of $I^{131}$ as before the drug was administered. It was suspected that thiouracil might cause an increased uptake of radio-iodine soon after its omission and would therefore be a valuable preliminary for radio-iodine therapy. In a series of 8 cases studied by Skanse and myself there was no constant increase in tracer dose uptake before and after thiouracil administration for 14 days. The tracer does is used as a guide to estimate treatment dosage of radio-iodine. In our experience the urinary excretion of radioactivity after both tracer and treatment dose check within a few per cents of each other. Thus, in 40 cases we found the average 48 hours tracer excretion was 29 per cent while the average excretion of a following therapy dose was 28.7 per cent.

Another use of radio-iodine that may be employed is the autoradiogram. This is a photographic print of a section of tissue containing radioactive material. This tissue tracer study was introduced in 1940 by Hamilton, Soley, and Eichorn[22] of California. They

obtained sections of variously diseased thyroids containing radio-iodine and by exposure in direct contact with photosensitive film these tissues photographed themselves. By this method they showed that hyperplastic thyroid tissue has a greater ability to concentrate iodine than tissue from normal subjects. The cancerous thyroid tissue they studied had little or no affinity for radio-iodine but the recent observations of Seidlin and his associates indicate that the more differentiated thyroid tumors may collect an appreciable amount of radio-iodine. Increasing the collection of radio-iodine by the tumor or its metastases has been accomplished in a few cases by removal of the accessible normal functioning thyroid. Auto-radiograms have proved of great value in studies of such cases.

Now of these three tests of thyroid function, (the thyrotrophin inactivation, the blood protein bound iodine, and the radio-iodine distribution pattern)— it is difficult to judge one as better than another as each is an index of a particular thyroid function. If we could have all three tests we would have a more complete assay of the morbid physiology than if we had but one or two. However, the basal metabolic rate still is the common test applied in the clinic. It measures the impact of thyroid hormone on all the end organs of the body and its magnitude usually depends on the amount of hormone in circulation and the sensitivity of end organs to it. However, Skanse[21] pointed out in his exhaustive comparative study of cases in our clinic, that in cases difficult to diagnose that the basal metabolic rate indicated thyrotoxicosis in 51 per cent of the cases, the serum protein bound iodine in 86 per cent, and the radioactive iodine tolerance test in 95 per cent. No test is perfect. This indicates that the radioactive test is the best test now available.

The use of these newer methods has recently helped us to differentiate conditions that simulate true thyroid disease For instance in "thyrotoxicosis factitia"[23] where normal, psychotic or hypothyroid persons secretely take thyroid to the point of toxicity we find that the basal metabolic rate is elevated, the protein bound iodine is high but the radio-iodine collection is normal or depressed. The answer to this is that the body responds to exogenous thyroid by an increase in circulating hormone and a rise in basal metabolism but the thyroid cells themselves remain normal or are actually depressed in function and so take up only a normal amount of radio-iodine. This inhibition of the normal thyroid function by the administration of thyroid has already been clearly described by Dr. Farquharson[24] and so we call it a "Farquharson phenomenon."

## III

Now that we have discussed diagnostic procedures and their application let us turn to the matter of treatment.

The treatment of hyperthyroidism or Graves' disease is in an unsettled state and will continue to be so until investigation reveals a process by which the adjustment can be made at the physiologic level of the endocrines. All methods of present treatment, surgical, anti-thyroid drugs, iodine, or radiation either external or internal, impinge on hormone production and so represent an attack on the end results of the disorder. We hope and expect that in your time better treatments will be discovered.

But let us examine the treatments now available to control a thyroid that is disordered and seems to be consuming the patient in the fire of his own metabolism.

First, we must recognize that certain number of persons go through the cycle of the disease and by avoiding doctors they avoid treatment. The natural history of the disease seems to be one of remissions and exacerbations. In time the hyperthyroidism may burn itself out and finally the patient goes into myxedema. Few doctors have had the restraint necessary to observe the natural history of this disorder—or any other—without trying to do something to the patient. Hastening to do something for a patient is often yielding to the inordinate demands of the patient but more likely it is based on the doctors fear of the future clinical course of the disease. One classic observation that I know of is that of the celebrated English clinician W. Hale White. During his long career in the latter part of the 19th century he followed 12 thyrotoxic persons and in his old age reported[25] that 7 died on an average of 3-1/2 years after the onset of the disease and that 5 lived on quite well for many years without so-called specific treatment.

Surgery was attempted in his time but it was always a very hazardous procedure until 1923 when the observations of H. S. Plummer[26] established the value of iodine in quieting the disordered thyroid. It is a curious thing that iodine had been held in low repute and was an outcast for half a century from medical teaching until that simple classic two paragraph paper of Plummer's pointed out the value of iodine in smoothing the post-operative course of thyrotoxic patients.

The profession quickly seized on iodine and proceeded to give it both before and after and without surgery to ameliorate the disease. During the 1920's much of this fundamental work on the iodine response was done in the Thyroid Clinic of the Massachusetts General Hospital by Professor J. H. Means[27] and his associates. They defined the iodine response, the effective dose, the causes of failure, the frequency of the metabolic response and the several clinical results of this treatment alone or in conjunction with subtotal thyroidectomy. It is still a good means of treatment in mild forms of the disease and we use it.

Patients with mild disease may be controlled by the daily administration of 5 drops of a saturated solution of potassium iodide (250 mg. of iodine). There is no advantage of iodine in any other chemical form. The

basal metabolic rate falls an average of 3.6 points per day for 10-12 days after the institution of iodine therapy. The ratio of fall is predictable and having reached its maximum in about 12 days the disease thereafter continues at about that level although the future course on prolonged iodine medication varies from complete disappearance of the disorder to a return of the disease in such fury as to necessitate a change or addition of another form of therapy.

The constancy of this response to iodine is such that where the other functional tests are not available it may be applied as a diagnostic test in cases where the basal metabolism rate is at the usual normal level or only slightly elevated.

The great boon of iodine to thyroid surgery was summarized by Boothby[28] of the Mayo Clinic in 1935. He showed how it made the gland less vascular and easier to handle, how it reduced the need for multiple operations and introduced the subtotal thyroidectomy in which four-fifths of the gland is removed at one operation and how the operative mortality dropped from 4 per cent in 1923 to well below 1 per cent.

In the period from 1943-1948 we have seen the medical management of this disease come to the fore. The introduction by Astwood[29] of drugs of the thiouracil series, has provided a means to adequately control the mild or moderate forms of the disease.

The predicted rate of fall of the basal metabolism rate is about 1 per cent per day for diffusely hyperplastic goiters and much slower in nodular toxic goiters treated with thiouracil drugs. However effective this drug is, we must remember that it means continued observation and expense. The doctor has to watch for toxic reactions which occur in about 2 per cent of patients and the patient continues to have a goiter that may even increase in size under treatment. As yet we have not learned the true incidence or time interval of recurrence after omission of the drug from patients who have been well treated. In severe disease with large goiters these drugs may be quite ineffectual.

## RADIATION TREATMENT

In 1901 when Professor Henri Becquerel of Paris was carrying a small vial of radium to a lecture in London there was produced a small reaction on the skin of his belly. He was quite amazed by this and consulted his friend, Dr. Besnier and in this consultation was conceived the idea of treating tissues by means of radioactive materials.

By 1902 Williams in Boston was treating hyperplastic thyroids with externally directed x-rays and in 1905 Dr. Abbe in New York reported a case successfully treated by implanting radium in a small tube directly into the substance of the thyroid gland. He is said to have received this idea of putting radium in a glass vial from the inventor, Alexander G. Bell.

From 1902-1934 there were many goiters treated by the external application of x-rays. By 1932 Menville[30] collected 10,541 cases of hyperthyroidism treated by 75 radiologists in the United States and Canada. Of this large group 66 per cent were considered cured, 21 per cent improved and 13 per cent failed to respond to the treatment.

In the year 1934 Madame Curie's daughter[31] reported that certain light elements (boron, magnesium, aluminum) which had been bombarded with alpha particles continued to emit energy for a short time after the bombardment was stopped. In other words, alpha particle bombardment produced radioactive forms of these light elements. This discovery stimulated similar experiments all over the world. In Italy the physicist Fermi[32] reasoned that neutrons, because of their lack of charge, should be effective in penetrating nuclei. He was able to verify this and

TABLE II

65 PATIENTS TREATED $I^{130}$ 1943-1946
(12-Hour Radioactive Iodine)

| | |
|---|---|
| Responded and continue well | 51* |
| Resulting hypothyroidism | 11 |
| Better, but still toxic | 3 |
| Average single effective dose | 0.5 MC/GM |

*10 received second dose $I^{130}$
5 received second dose $I^{131}$

found that the nucleus of the bombarded atom captured the neutron, and that thus there was produced an unstable nucleus which achieved its stability only by emitting an electron. Thus the final stable nucleus became an isotope which is one unit higher in mass number and one unit higher in atomic number. As a result of many experiments starting in 1934, radioactive isotopes of every element in the periodic table were produced. One of the first such isotopes was radioactive iodine.

The use of radioactive iodine in treating hyperthyroidism is based on two facts:

1. The natural avidity that the thyroid has for collecting iodine and

2. The release of the electron within the thyroid that sends beta rays only a few millimeters into the tissue. Beta rays act the same as x-rays.

This highly selective form of radiation therapy was started at the Massachusetts General Hospital by Dr. Saul Hertz in 1941 and in 1942[33] he made a preliminary report of his experience. At the same time Hamilton and Lawrence[34] reported their experience form California. Hertz continued this until 1943 when he joined the Navy; in the treatment of his cases, however, both radioactive and ordinary iodine were used. It fell to Professor Robley Evans and me to carry on this work and on analysis of the situation then, we felt that we could not be sure whether those patients of Hertz who had improved were responding to the radioactive iodine, the ordinary iodine, or their combination. Consequently, we decided that definitive use of this new agent could be established best by a

program that would cover five points:

1. The use of radioactive iodine alone.
2. The definition of the single effective doses—the duration of its effects—the pattern of relapse, if any, of thyrotosicosis.
3. The production of myxedema by a single dose.
4. The observation of the histologic changes in the same gland both before and after such treatment.
5. The observation of the toxic effects of radioactive iodine.

In 1946 we reported[35] our experience in treating sixty-five patients with the 12-hour isotope of $I^{130}$.

These results are depicted in Table II and it was then, and is now, our belief that radioactive iodine is another effective method of controlling hyperthyroidism. We answered the five points.

From 1946 to the present time we have used the 8 day isotope, $I^{131}$, in treating an additional 175 patients with this tissue selective radiation. The results in these patients are shown in the following Table III. This radioactive material comes from the United States Atomic Energy Plant at Oak Ridge, Tennessee.

TABLE III

175 PATIENTS WITH HYPERTHYROIDISM TREATED ONLY WITH RADIOACTIVE IODINE

| August 1946 – November 1949 | |
|---|---|
| Responded and continue well—1 dose | 130 |
| 2 doses | 14 |
| Better, but toxic 6 months after treatment | 9 |
| Died: 1. Myocardial infarction, 19 days after treatment | |
| 2. Cancer of the rectum, 2-1/2 years after treatment | |
| 3. Pneumonia, 6 weeks after treatment | 3 |
| Treated within 6 months | 19 |
| Operated; other Treatment; Recurrence | 1 |
| 97% Radiation Delivered in | 30 days |
| Radiation sickness | 0 |
| Average interval to normal BMR | 2 Mos. |
| Resulting Hypothyroidism (2 for Heart Disease) | 8 Patients |

## CHOICE OF PATIENTS

The choice of patients was, for a time, limited to persons over forty-five years of age, but during the past year we have not made any restrictions because of age. In the clinic approximately one-third of the new patients are treated by operation, one-third by drug therapy and the other third given radioactive iodine provided that they agree to a thyroid biopsy at some future time. Twenty-five per cent of the patients given radioiodine had previous subtotal thyroidectomies for this disease. It is of some interest that their disease had recurred from one to thirty years after operation. Other reasons for the choice of internal radiation therapy were the probability of poor operative risk and the presence of severe eye signs. No clear indications against radioiodine therapy are known. Renal damage and congestive cardiac failure are known to delay the excretion of radioiodine.

The diffusely hyperplastic gland responds much better than does the nodular gland, but this may be determined before treatment by the use of tracer studies. Unless the nodular gland is avid for iodine there is no expectation of success unless one gives many doses. The occasional nodule that is hyperfunctioning may retain enough radioactivity to make treatment effective, but this can be determined only by directional counting after a tracer dose of $I^{131}$.

The occasional pregnant woman who is thyrotoxic presents a problem in care. We found[35] that the fetal thyroid does not begin to collect radioiodine until the fourteenth week. It has been found safe to treat thyrotoxic women with radioactive iodine up to the fourth month of pregnancy. Two patients so treated have been delivered of healthy children who are developing normally.

## RESPONSE TO TREATMENT

The response to radioactive iodine is characterized by a gradual return to a state of normal thyroid function over a period of six to twelve weeks. Individuals vary considerably in their response, but the average interval before a normal metabolic rate is attained is close to two months. Although 97 per cent of the radation is delivered within the thyroid in a period of thirty days, the physiologic effect consequent to fibrosis and loss of gland structure goes on for several weeks. An index of this is the fact that the myxedema which appeared in eight patients was definitely established in twelve to twenty weeks, (average sixteen) after treatment. One patient had a progressive decline in her metabolic rate until the third year after treatment when she was judged myxedematous. In these individuals the goiter disappeared and no thyroid tissue could be palpated. In those with large goiters (4-5X) who responded to radioactive iodine, the gland usually became hard or firm and about twice normal in size. We wait at least 6 months for this response before considering a second dose.

Response to treatment also includes a slowing of the heart and often a restoration of normal heart rhythm. The decreased demand on the heart was followed in many instances by the clearing of the symptoms and signs of congestive heart failure. Indeed this aspect of the response to radioiodine is so impressive that we are preparing a separate report of the effects on the cardiovascular system. A decrease in the blood level of protein bound iodine (thyroid hormone) and usually a noteworthy improvement in the eyes were observed in the weeks subsequent to treatment. The eye changes are gratifying to the patient. Although the disappearance of lid spasm, lid retraction, edema and chemosis may be evident. The measurable change in exophthalmos may be insignificant. The ophthalmopathy of Graves' disease is still one of the most baffling problems in medicine. The chief reason for this is our ignorance of its

cause. There are many theories, but there is no clear proof of the cause of the bulging, staring eyes, which may be associated either with an elevated or a normal metabolic rate. Fourteen of these 240 patients had severe eye signs with hyperthyroidism. We have learned that the eyes of these patients usually improve after radioiodine therapy. None of them have become worse, an unfortunate sequel occasionally seen after subtotal thyroidectomy. The photograph published in our original paper showed the marked changes, especially the loss of lid spasm and retraction after treatment. Exophthalmometer measurements before and after treatment indicate that the degree of exophthalmos changes very little and that the appearance of improvement results chiefly from loss of chemosis, lid retraction, and edema.

One of the most important observations made on the response to treatment has been the microscopic study of these irradiated tissues. To date we have reviewed tissue from seven patients who had received radioiodine from nineteen days to five and one-half years prior to the anatomic study. The tissue removed nineteen days after treatment showed evidence of acute cellular injury with cellular swelling and apparent loosening of the follicle cells from the basement membrane; Fibrosis was not observed until tissue was removed five months after therapy. Fibrosis and regenerative hyperplasia commonly appeared in tissue removed one, two and five years after radiation. One patient died five and one-half years after treatment because of carcinoma of the right upper bronchus with metatastases to the cervical, supraclavicular, axillary, bronchial, mediastinal, porta hepatis, retroperitoneal and inguinal lymph nodes; likewise colonies of tumor were found in the right lung, liver, both adrenals, kidneys, the pancreas and terminal ileum. The right lobe of the thyroid harbored a tiny (2 mm.) area of metastatic squamous cell carcinoma; the gland as a whole was firm, fibrotic and weighed 11 gm. and had the appearance of fibrosis encircling distorted follicles that contained cells of above average in mean cell height.

It is our plan to obtain more biopsies from patients as the years elapse. By following a small, select group for a twenty-year period we should be able to answer definitely the question of the hazard of this treatment being carcinogenic.

The chief objection now raised to this radiation treatment is that its action might cause a thyroid cancer to appear in later years. In discussing the quantitative aspects of radiation carcinogenesis in humans, Evans found that the doses required to produce osteogenic sarcoma by chronic radium poisoning, lung carcinoma from breathing radon, liver sarcoma following thorotrast, and skin carcinoma following exposure to gamma rays have the following factors in common.

1. A delay of 10-20 years between the beginning of radiation and the recognition of malignancy.

2. A low level radiation dose maintained over a period of many years.

From this comparative analysis it seems extremely unlikely that radioactive iodine therapy that releases 97 per cent of its energy into the tissues in thirty days will induce carcinoma in the thyroid or urinary excretory passages.

In conclusion, then, we can say that there are five good methods to control hyperthyroidism and all of these are being used effectively.

1. Iodine alone.
2. Propyl or Methyl Thiouracil.
3. Subtotal thyroidectomy after preparation with one or both of these drugs.
4. External radiation by x-ray.
5. Internal radiation by release of beta rays from $I^{131}$.

Possibly a new and more physiologic method of controlling the disease will be developed in your time, but only the test of time will establish which of these five methods is the simplest, safest, and least expensive and so the best one for the patient.

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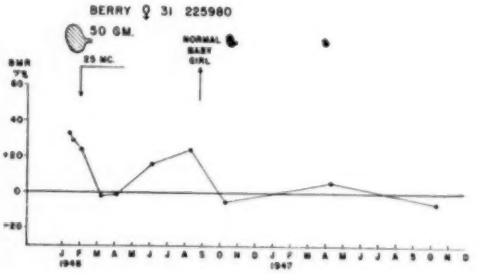
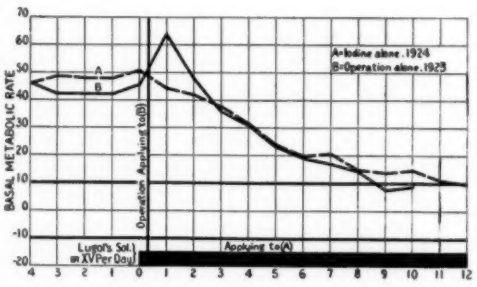



Patient treated in second month of pregnancy and baby girl doing well. No myxedema. Mother had severe eye signs and two previous operations—an ideal case in which to use radioactive iodine. Eyes have improved since treatment.




Effect of Iodine compared with that of subtotal thyroidectomy in Graves' disease. The solid line represents the average curve obtained by Segall and Means (1924) in uniodinized patients; the broken line is the average curve for iodine response obtained by Starr, Segall, and Means (1924).
Courtesy J. H. Means.

# Liver Cirrhoses: A Review

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(A native of South Carolina, Dr. Symmers has made an enviable record in the field of pathology, and we welcome his contribution to the pages of our Journal—Editor).

Cirrhosis is the Anglicised form of the Greek word kirrhos, meaning tawny. The designation was originally applied to fibrosis of the liver because of the yellowish color of that organ in certain conditions of disease. It would seem that the use of the term cirrhosis interchangeably with "fibrosis" is now sanctioned by its universal abuse.

In the absence of a classification based on causes, the liver cirrhoses may be grouped as follows:

| | |
|---|---|
| Nutritional | |
| a) Laennec's atrophic cirrhosis | |
| b) "Parasitic" cirrhoses | Schistosmal<br>Bilharzial<br>Clonorchal |
| Syphilitic | |
| a) Congenital | Hepar lobatum<br>Pericellular cirrhosis<br>Juvenile atrophic cirrhoses, Laennec type |
| b) Acquired | Hepar lobatum<br>Diffuse nodular atrophic cirrhoses, Laennec type |
| Hypertrophic | Hanot's cirrhosis<br>Fatty cirrhosis |
| Biliary | Obstructive<br>Juvenile, hypertrophic type |
| Mechanical | Cardiac |
| Pigment | Hemochromatosis |
| Post-necrosis | Subacute yellow atrophy |

Laennec's Atrophic Cirrhosis of the Liver.—Laennec's atrophic cirrhosis is also known as alcoholic cirrhosis or gin drinker's liver. The frequent and long continued use of alcohol in concentrated form is so commonly regarded as a specific factor in the production of this variety of cirrhosis as to constitute a sort of tradition in medicine. As a matter of fact, the influence of alcohol appears to be greatly exaggerated. The role that it plays, while important, is contributory, but as a specific cause of atrophic cirrhosis of the liver it is now believed to be a negligible quantity. There is, however, a variety of cirrhosis of the liver in which alcohol, especially in the form of the highly diluted malt beverages, plays an essential role. The lesion in question is known as hypertrophic fatty cirrhosis and is characterized by enormous enlargement of the organ, the surface being smooth and yellowish; the liver cells are overburdened with fat, while the growth of connective tissue, compared with that of the atrophic variety, is insignificant, interfering in no wise with the portal circulation, and this, after all, is the standard by which the severity of cirrhosis is to be measured. Indeed, hypertrophic fatty cirrhosis of the liver is seldom attended by clinical disturbances of more than passing moment and is practically always met with as an accidental necropsy finding, or its existence is postulated in the alcoholic subject, when, in the routine examination, smooth enlargement of the liver is detected with or without a mild degree of jaundice, and there is no other assignable cause. This form of liver disease is probably the one which originally seemed to merit the term cirrhosis, meaning yellow or tawny.

That the role of alcohol in the production of atrophic cirrhosis of the liver is of secondary importance is substantiated by several facts, among them, that the disease is of rare occurrence in comparison with the number of individuals who are addicted to the abuse of alcohol. Formad,[1] for example, found only six cases of atrophic cirrhosis of the liver in 250 alcoholic subjects examined post mortem. This is in accord with the observation that, in Bellevue Hospital, the diagnosis of atrophic cirrhosis of the liver is confirmed in somewhat less than 3% of all bodies coming to necropsy in spite of the fact that moderation in the use of alcohol among the type of patients received in that hospital is determined largely by lack of opportunity for its abuse.[2] That atrophic cirrhosis of the liver is frequently associated with a history of long continued and immoderate use of alcohol is a misleading argument in favor of its etiologic specificity, and is counterbalanced by the frequent occurrence of the lesion in temperate or abstinent individuals, and in non-alcoholic children, while among the Brahims and Mohammedans, in whom the use of alcohol is a religious interdiction seldom violated, the disease is no less prevalent than among other peoples. That alcohol as such, does not satisfactorily explain the origin of Laennec's cirrhosis is shown by the fact that additional hypotheses have been formulated, among them, that the lesion is due to adulterants, such as potassium sulphate or lead compounds, or to organic acids liberated in the gastrointestinal tract of the drunkard as the result of intoxication, or that

From the Laboratories of Pathology, Bellevue Hospital

alcohol exerts its inimical effect by inhibiting the detoxicating function of the liver or, finally, that alcohol produces disturbances which result in loss of appetite so that the patient becomes a subject of nutritional changes which in turn contribute to the production of cirrhosis of the liver. None of these hypotheses, however, explains the occurrence of atrophic cirrhosis of the liver in non-alcoholic subjects and, in fact, all things tend to show that in a majority of instances the disease is a far more inclusive process than is indicated by any single etiologic factor. Furthermore, it has not been found possible to produce cirrhosis of the liver in lower animals by the long continued administration of alcohol. This is in agreement with the view that alcohol brings about degenerative changes in more highly organized cells without at the same time stimulating the growth of connective tissue except in those cases where degeneration proceeds to necrosis of liver cells followed by limited replacement fibrosis. Perhaps the nearest approach to the experimental reproduction of atrophic cirrhosis of the liver as the lesion is seen in human beings, has been accomplished by the administration to animals of destructive poisons, notably chloroform, acting in association with bacteria and their toxins, the former serving down the parenchyma and the latter stimulating the growth of connective tissue. In the same way, it appears that a satisfactory explanation of at least a certain group of cases of atrophic cirrhosis of the liver in man is to be found in the combination of chronic alcoholism and syphilis, alcohol acting as a degenerative or necrotizing poison, while syphilis produces inflammatory changes resulting in the overgrowth of connective tissue. In still other cases, syphilis acting alone, appears to be capable of producing atrophic cirrhosis of the liver, in which event inflammatory changes occur in the interstititium while the parenchyma shows few, if any, destructive lesions.

Ratnoff and Patek[3] analyzed the charts of 865 patients in whom the diagnosis of Laennec's atrophic cirrhosis of the liver had been made. Of this number 386 were believed to show adequate clinical evidence of cirrhosis. In 178 of the 386 cases the diagnosis was established by histologic examination of tissues removed surgically or of specimens obtained at necropsy. The remaining 208 cases were classified as "presumptive." The evidence on which these conclusions were based included the occurrence of a palpable liver and spleen, signs of collateral venous circulation, jaundice, ascites, esophageal varices and hematemesis. However, in appraising such findings it is to be recalled that the histologic examination of surgical specimens is a weak reed on which to lean in arriving at the diagnosis of Laennec's cirrhosis since identical tissue changes may be found in the so-called hepar lobatum of late acquired or late congenital syphilis and that in hepar lobatum much the same clinical symptoms and signs may likewise occur.

The importance of defective diet as a factor in the production of atrophic cirrhosis of the liver was first noted in countries where alcoholism is practically unknown. For example, in Southern India, Rao[4] noted that, of 64 patients with cirrhosis of the liver, 44 were poorly nourished, the majority coming from extremely low economic levels. In Ceylon similar observations have been made and in Syria, where alcohol is likewise a negligible factor, subjects of cirrhosis of the liver have been observed to subsist on diets that are poor in proteins. In 84 cases of cirrhosis of the liver in China, Yang[5] observed that over 70 percent were in laborers who lived on coarse carbohydrate foods. In this country, attention was first directed to defective dietetic conditions, especially by Opie and Alford,[6] by Davis and Whipple[7] and by Patek[8] and his co-workers. The role of defective diet as a cause of cirrhosis of the liver has been made the subject of experimental studies showing that the feeding of yeast, of protein and of choline may afford a degree of protection against poisons which otherwise tend to injure the liver, while other studies suggest that the lack of certain unknown factors in yeast brings about fibrotic changes in the livers of rats and rabbits. The feeding of excess fat or of cystine or of diets low in protein is also said to cause fibrotic changes in the livers of experimental animals. The significance of these studies in their relationship to human cirrhosis awaits further investigation. This is especially true of the experimental reproduction of the complete picture of atrophic cirrhosis of the liver including jaundice and ascites as well as of those experimental investigations which emphasize fatty changes in the liver cells as precursors of atrophic cirrhosis. In man fatty changes as contributing factors in the production of atrophic cirrhosis of the liver, if they occur at all, are apparently of negligible degree.

In 1914 Opie and Alford, and in 1919, Davis and Whipple showed that the degree to which experimental animals are susceptible to chloroform poisoning depends largely on the character of the diet they receive. However, liver lesions produced by dietary deficiency did not attain due recognition until 1940 when Rich and Hamilton[9] showed that cirrhosis of the liver could be produced in rabbits by a synthetic diet which was lacking in yeast but was supplemented by vitamins such as thiamine, riboflavin, pyridoxine and nicotinic acid. These findings become all the more significant in view of the observations of Von Glahn and Flinn[10] that yeast added to the diet of rabbits reduces the tendency of the liver to be damaged by lead arsenate. In 1941, Lillie, Daft and Sebrell[11] produced cirrhosis of the liver in rats with a diet which was low in protein and in sulphur-containing amino acids but supplemented by thiamine, nicotinic acid, pyridoxine and pantothenic acid. In the following year Lillie[12] and co-workers reported the significant fact that treating with choline or increasing the casein content of the diet resulted in clinical improvement of rats with experimentally produced cirrhosis of the liver.

The condition known as Banti's disease, according to the original description of the Italian pathologist,

is one of several forms of "splenic anemia" and is divisible into three symptomatic stages — the preascitic, the intermediary and the ascitic. The preascitic stage is initiated by insidious hyperplasia of the spleen and by anemia of the secondary type with leukopenia. At this stage the liver is smooth or only slightly irregular, the sclerotic changes in it being so limited as not to interfere with the portal circulation. The intermediary stage is attended by digestive disturbances, dependent on chronic passive congestion of the gastrointestinal mucous membrane, and occasionally by hemorrhages due to rupture of esophageal varices. In the ascitic stage, anemia is extreme, the patient is emaciated, the abdomen fills with serous fluid and death supervenes. In these circumstances necropsy reveals cirrhosis of the liver together with enlargement of the spleen, the latter organ often reaching into the pelvis, and weighing 1,200 grams or more. Osler defined Banti's disease as "an intoxication of unknown nature characterized by great chronicity. There is a primary progressive enlargement of the spleen which cannot be correlated with any known cause, anemia of the secondary type with leucopenia—a marked tendency to hemorrhage from the lower oesophagus and a terminal state with cirrhosis of the liver."

There are at least two views concerning the nature of so-called Banti's disease. According to Norris, Symmers and Shapiro,[13] it is a lesion due to syphilis, the changes in the spleen being those of chronic interstitial splenitis, while the changes in the liver may be those of cirrhosis of the atrophic or Laennec type or of hepar lobatum. In a syphilitic spleen Marchand found histologic changes identical with those described by Banti and advanced the view that many cases of so-called Banti's disease are instances of the preservation of congenital syphilitic splenomegaly. Similar cases have been reported by Copeland, Giffin[14] and others. One of Giffin's three patients with this disease was a woman aged 40 who stated that she had been aware of enlargement of the spleen for twelve years. At operation it was observed that the liver was smooth. The spleen was removed; it measured 30x17 cm. and weighed 900 gm. Microscopic examination showed diffuse fibrosis corresponding to that described by Banti, and there were numerous spirochetes in the walls of the splenic vessels.

According to another view, so-called Banti's disease results from a variety of primary lesions which produce hypertension in the splenic vein, followed by congestive splenomegaly and cirrhosis of the liver (Thompson,[15] Karsner,[16] Foot[17]).

Splenectomy is often advised in cases of Banti's syndrome on the ground that removal of the spleen results in improvement or disappearance of anemia. It is also held by some that splenectomy is followed by cessation or prevention of cirrhotic changes in the liver. It is difficult to understand how one arrives at the latter conclusion without the gift of prescience.

The disease known as acute yellow atrophy of the liver, malignant jaundice or, better perhaps, as diffuse toxic necrosis, is almost invariably fatal, but cases occasionally occur in which acute symptoms abate and the liver resolves itself into scattered islands of relatively well preserved parenchymal cells that eventually become surrounded by bands of fibrous tissue, the naked eye changes thus presenting a resemblance to those of Laennec's cirrhosis. Whether, in these circumstances, the liver cells are products of regeneration or cells which remain after necrosis subsides, is problematical. The initial symptoms are those of the acute lesion and consist of apparently innocuous gastrointestinal disturbances followed shortly by headache, jaundice which, at first, is slight but later deepens and finally becomes intense, by wild delirium, convulsions, coma, and often by death. In cases where recovery occurs the symptoms and signs are much the same as those of Laennec's cirrhosis, such as jaundice, which may be prolonged over many months with or without ascites, signs of superficial abdominal or abdominal and thoracic venous engorgement, and hematemesis. The subacute variety of so-called acute yellow atrophy of the liver was first described by Milne and is now a recognized entity.

Syphilitic Cirrhoses.—That form of syphilitic cirrhosis of the liver known as hepar lobatum is often attended by symptoms and signs that are identical with those of Laennec's atrophic cirrhosis of the liver, especially in those cases in which the same mechanical factors prevail, such as the mechanisms that produce jaundice, ascites and esophageal varices. In other respects the two diseases may be distinguished one from the other only when it is possible to establish the syphilitic nature of the former and the absence of syphilis in the latter. Anatomically, hepar lobatum is characterized by a greater or less degree of deformity of the liver in the form of coarse and irregularly distributed lobulations due to the overgrowth of connective tissue. The latter is arranged around large groups of lobules and represents either the retracted scars of healed gummas or a chronic productive inflammatory process arising without the intervention of focal granulomas, or both. The surface of the lobulated areas is usually smooth, occasionally granular. The incidence of hepar lobatum is indicated by the fact that the lesion was encountered 50 times in 314 cases of late acquired syphilis occurring among 4,880 necropsies at Bellevue Hospital or in 16 percent. By this it is not meant to imply, of course, that hepar lobatum is susceptible of diagnosis in 16 percent of all patients with late acquired syphilis. On the contrary, hepar lobatum may cause no symptoms or signs by which it could even be suspected during life.

Over a period of thirty years hepar lobatum was encountered 102 times among 23,792 necropsies at Bellevue Hospital (Symmers and Spain[18]). According to the clinical records of 28 cases that were available for analysis, the lesion occurred 23 times in males and 5 times in females; 24 patients were of the white race

and 4 were Negroes. The average age was 38.5 years; the youngest patient was 19 and the oldest 80. Six patients admitted excessive use of alcohol. The diagnosis of syphilitic cirrhosis of the liver was made during life in 3 cases, and the condition was suspected in 1. In 18 cases the liver was palpable below the right costal slope for distances varying from 2 to 12 cm.; in 6 instances the liver was nodular, and in 10 the organ was tender. The spleen was palpable in 13 cases. Jaundice occurred in 8 cases, ascites in 18 and hematemesis in 7. In 12 cases fever was present. The temperature was irregular, varying between 100 and 106° F. The Wassermann reaction was strongly positive in 10. Syphilitic lesions, such as cutaneous gumma, fibrosis of the testicles and penile scar, were noted in 10 cases. From these facts it is apparent that the clinical diagnosis of hepar lobatum depends almost exclusively on such physical signs as jaundice, ascites and residual lesions of syphilis occurring elsewhere and that symptoms are few and of comparatively little importance. The paucity of symptoms and the relative frequency of physical signs are evident in MacCrae and Caven's[19] analysis of the changes in 100 cases of hepar lobatum which were studied from the purely clinical point of view.

The incidence of hepar lobatum by decades of life in 102 cases is given in the accompanying table.

INCIDENCE OF HEPAR LOBATUM BY DECADES OF LIFE

| Age | Number of Cases | Percentage |
|---|---|---|
| 9 | 1 | 0.9 |
| 10-20 | 3 | 2.9 |
| 21-30 | 8 | 7.9 |
| 31-40 | 27 | 26.5 |
| 41-50 | 29 | 28.7 |
| 51-60 | 21 | 20.8 |
| 61-70 | 11 | 10.9 |
| 71-80 | 2 | 1.9 |

In patients between 30 and 50 years there were 56 cases (54.9 percent). The lesion, therefore, is one of youth or of comparative youth.

The lesion occurred 83 times in white persons and 19 times in Negroes, a ratio of 4.4 to 1. The proportion of white to Negro patients admitted to Bellevue Hospital is 4 to 1. There were 71 males and 31 females, a ratio of 2.3 to 1. The proportion of male to female patients admitted to Bellevue Hospital is 1.3 to 1. The disease, therefore, is commoner in males than in females and more common in white people than in Negroes.

In 1927 an abrupt decline occurred in the number of cases of hepar lobatum encountered in necropsies at Bellevue Hospital. In view of the fact that about seventeen years earlier preparations of arsenic came into more or less general use in the treatment of syphilis, it seems reasonable to assume that the decline was due, at least in part, to the effects of therapy.

In 102 cases of hepar lobatum the following changes were noted at necropsy: Jaundice occurred in 35 cases (34 percent). It was slight in 8, moderate in 10 and intense in 17; ascites occurred in 32 cases (31 percent); esophageal varices were noted in 15 cases (15 percent), and in all of them rupture had occurred during life. Unruptured varices, if present, were not recorded. The state of nutrition was recorded in 40 cases. In 8 cases it was described as "poor" and in 20 as "good"; in 12 cases the subjects were said to be emaciated.

Miscellaneous associated lesions of syphilis were noted in 68 cases (67 percent). In order of their frequency they occurred as follows: syphilitic aortitis in 21; chronic interstital syphilitic splenitis in 18; fibrosis of testicles in 14—unilateral in 3, bilateral in 11; changes in the bony system in 7; cerebrospinal syphilis in 3; smooth indurative atrophy of the base of the tongue in 2; gumma of lymph nodes, tracheitis and congenital syphilitic pancreatitis each in 1.

Liver.—In 37 cases (36 percent) the liver was coarsely nodular, and in 4 of these the edge of the organ projected beneath the right costal margin, reaching in 2 as low as the level of the umbilicus. In 2 cases the liver was the site of amyloid deposits. In 53 cases the average weight of the liver was 1,556 gm., a weight which approximates the normal. The smallest liver weighed 608 gm. and the heaviest, 3,450 gm. Solitary gumma was noted in the liver in 7 cases and multiple gumma in 12; in only 3 of these 19 did a gumma project above the upper surface of the liver and appear to invite detection during life.

Spleen.—In 47 cases of hepar lobatum the spleen was described as "normal in size," "slightly enlarged," "moderately enlarged," or "considerably enlarged" at necropsy. In an additional 55 cases the average weight of the spleen was 538 gm., or 338 gm. in excess of the extreme normal limit of 200 gm. The smallest spleen weighed 24 gm. and occurred in a 9 year old subject with congenital syphilis. Among adults the smallest spleen weighed 60 gm. and the largest 1,980 gm. In 18 of the 102 cases of hepar lobatum the spleen showed the changes incident to chronic interstitial syphilitic splenitis, and in 3 cases deposits of amyloid were present.

There is a form of splenomegaly which occurs in persons with late acquired syphilis, perhaps exclusively, that is attended by pinhead-sized, ochre-colored bodies consisting microscopically of thickened and hyalinized central arteries with mineralization of their fibromuscular and elastic coats, together with mineral-free hyaline deposits in and around neighboring venules, as well as periarterial hemorrhagic extravasations. It seems that up to 1919 only 9 cases had been described in medical literature—1 each by Simonds, Sprunt and Marini and 6 by Symmers, Gettler and Johnson;[20] 2 additional cases have since been recorded in the necropsy reports of Bellevue Hospital and 1 case at Goldwater Memorial Hospital. The

spleens were enormously enlarged, weighing 1,000, 1,280, 775, 1,900, 3,410, 1,275, 1,050, 1,040, 1,150, 1,020 and 1,030 gm., an average of 1,357 gm. or 1,157 gm. above the high normal weight of the spleen in adults. In one case the weight was not recorded, but the spleen was described as "three times larger than normal." In this form of splenomegaly it appears that hemorrhage is followed by disintegration of hemoglobin, with iron compounds being deposited in the hyalinized arterial coats, and that the circulation is impaired in such manner as to permit escape of serum, with the precipitation of calcium in fibers that are prepared for its reception as a result of previous deposition of iron. Also, salts of silica and phosphorus are present in increased quantities, the former accounting, apparently, for the ochre color of the deposits in the substance of the spleen. In the 6 cases recorded by Symmers, Gettler and Johnson and in the 3 cases since encountered at Bellevue and Goldwater Memorial Hospitals the patients all had syphilitic cirrhosis of the liver or syphilis of the liver and other organs, including fibrosis of the testicles, rupia and like residua.

From the foregoing it is evident that in a certain number of instances hepar lobatum is attended by anatomic changes which are detectable during life and that the incidence of the lesion is such as to warrant a search for it in all cases of late acquired and late congenital syphilis. A history of syphilis and a positive Wassermann reaction or other serologic evidence are important, but signs of residual syphilitic changes in the skin or in the visible mucous membranes, fibrotic lesions of the testicle, changes in the bony system, penile scars and the like, or jaundice associated with an enlarged, firm spleen, with or without ascites, should direct attention to the liver as the possible seat of syphilitic cirrhosis. It would also seem that evidence should be sought in the form of response to treatment with iodides or other appropriate drugs. It is to be recalled, however, that in a considerable proportion of cases hepar lobatum gives rise to no symptoms or signs during life and is not discovered unless necropsy is done. In these circumstances there is no interference with the biliary drainage system and jaundice does not occur, while ascites is absent because there is no obstruction to the venous return, the collateral circulation remaining intact. In this form of cirrhosis it may be said, therefore, that spontaneous, so-called clinical cure is sometimes brought about.

In congenital syphilis, particularly of the newly born, there is a variety of cirrhosis of the liver in which the connective tissue is markedly cellular, does not tend to mature, and is distributed diffusely and in such fashion as to surround individual liver cells, which are atrophic and granular, and compressed into various shapes—the so-called pericellular cirrhosis. Miliary syphilomas are often present in the form of collections of lymphoid cells with or without central necrosis—gummas. The liver itself is markedly enlarged and smooth, and the spleen is fibrotic and considerably increased in size. The disease frequently is associated with visible or otherwise detectable signs of congenital syphilis in the form of interstitial keratitis, cutaneous lesions, Hutchinson's teeth, and the like, but changes referable to disturbances in the portal circulation are not apparent. Such children rarely survive the first few weeks of extra-uterine life.

There is a form of atrophic cirrhosis of the liver occurring in children, often in two or more members of the same family, that is not infrequently to be observed in combination with the familiar signs of congenital syphilis, and, occasionally, in the juvenile variety of general paresis, so that the syphilitic nature of the hepatic lesion is scarcely to be doubted. There are also reasons for believing that those cases of atrophic cirrhosis of the liver which are associated with progressive degenerative lesions of the lenticular nucleus, described by Wilson and others as a familial disease, likewise may constitute syphilitic manifestations.

In the cirrhotic livers of congenital syphilis spirochetes are usually demonstrable in abundant numbers.

Hanot's Hypertrophic Cirrhosis.—The lesion known as hypertrophic cirrhosis of the liver or less appropriately as hypertrophic biliary cirrhosis, was described by Hanot, in 1875. Since then it appears that only the two cases recorded by List,[21] in 1926, have been sufficiently well studied to indicate that the disease is an anatomic and histologic entity. On the other hand, many pathologists of wide experience have never seen a case and are inclined to doubt its existence as a distinct form. Still others are apparently agreed that the disease is a clinical entity which, however, awaits further investigation from the morphologic standpoint. Anatomically, the liver is enlarged. In one of the cases recorded by List, the organ attained a weight of 4000 gm. The surface of the liver is granular, the capsule tense, and the edges rounded. The organ is firm in consistence and cuts with resistance. Jaundice may be present and is sometimes intense, the color varying from a light yellow to deep green. Microscopically, overgrowth of connective tissue is apparent both in the perilobular spaces and around individual liver cells or small groups of cells, so that in the latter respect the organ bears a resemblance to the liver of pericellular cirrhosis in congenital syphilis. Syphilis, however, is not known to be a factor in the etiology of Hanot's cirrhosis. The view that hypertrophic cirrhosis is due to overgrowth of perilobular as well as pericellular connective tissue was orginally entertained by Hanot. Later, however, both Hanot and others confused the lesion with the early stages of Laennec's cirrhosis in which the liver is commonly larger than in normal circumstances. Widespread capillary cholangitis attended by proliferation of bile canaliculi often follows obstructive lesions of the hepatic duct but is only occasionally present in Hanot's hypertrophic cirrhosis. It is scarcely believable, therefore, that the latter disease is primarily a lesion of the

smaller bile ducts, hence the impropriety of the term biliary cirrhosis. Clinically, Hanot's cirrhosis is usually encountered in males between the ages of 20 and 35, rarely after the fourth decade. The course of the disease is often prolonged for periods of from six to ten years. Certain negative features are important. For example, there is no history of alcoholism, ascites is practically unknown and signs of superficial venous engorgement are almost never discernible. Jaundice, usually slight, is often shown by not more than a faint yellowish tint of conjunctivae or skin, although at any time in the course of the disease icterus gravis may develop and may be accompanied by hyperpyrexia and delirium, followed by death. The disease is thought to be more frequent in France than in other countries and certain observers believe that it may occur in members of the same family. Pain may be present in the form of a slight dragging sensation in the region of the liver or it may be so severe as to induce nausea and vomiting, followed by deeping of icteric discoloration. In other cases pain may be entirely absent. The patient's first complaint is sometimes that of a feeling of fullness in the upper zone of the abdomen. Even at this early time, inspection may reveal signs of marked enlargement of the liver and palpation may show that the organ reaches far below its normal level, the vertical flatness sometimes extending to the level of the umbilicus. The enlargement appears to be uniform, the consistence increased and the edge of the liver is distinct and firm. Hemorrhages may occur into the skin in the form of petechiae or purpuric spots, or from the nose, gums or other mucous membranes.

There is a form of juvenile so-called hypertrophic biliary cirrhosis of the liver which is apparently indigenous to India. It usually occurs in children under two years of age. The disease lasts from a few months to one or two years. The liver is greatly enlarged, jaundice is marked and, in the later stages, ascites is present. Histologically, the disease is characterized by overgrowth of connective tissue within the liver lobules, and by proliferation of bile ducts.

Biliary Cirrhosis.—True biliary cirrhosis is oftenest obstructive and is characterized by fibrosis attended by excessive proliferation of bile canaliculi following long continued pressure on the hepatic duct. Both the naked eye and microscopic changes resemble those of Laennec's atrophic cirrhosis. In experimental animals, the lesion may be reproduced by ligation of the common duct. In man, occasional cases are observed in which there is partial or almost complete interference with the escape of bile due to the lodgment of concretions or to the presence of tumors or inflammatory strictures in adults, and to congenital obliteration of the bile ducts in infants.

Pigment Cirrhosis.—The disease hemochromatosis was first described by von Recklinghausen. It is primarily a disorder of iron metabolism and occurs almost exclusively in males in the middle decades of life. In a considerable percentage of cases it is attended by cirrhosis of the liver the incidence of which, however, varies considerably. In certain countries, notably Japan and the Netherlands East Indies, cirrhosis in hemochromatosis is said not to occur at all, while in certain parts of the United States and of Germany and Switzerland the incidence varies from 3 to 25 percent. In one group of cases hemochromatosis is characterized clinically by bronzing of the skin, enlargement of the liver and diabetes, the French having named the triad diabète bronzé. Anatomically, the liver is dark brown or yellowish-brown, and nodular. In the latter respect it resembles Laennec's atrophic cirrhosis. Microscopically, the interlobular connective tissues are fibrotic and richly infiltrated by hemosiderin and by lesser quantities of hemofuchsin. The fibrotic changes in the liver seldom cause clinically detectable signs although cases occur in which ascites and jaundice are present. In still other cases the cirrhotic lesions are associated with carcinoma arising either in the parenchyma cells or in the epithelium of the smaller bile ducts, the former type predominating in the ratio of approximately 6:1. Stewart,[22] in 1931, collected 151 cases of hemochromatosis that had been investigated at necropsy. Of this number 15, or 9.9 percent, showed pigment cirrhosis of the liver associated with the changes of primary carcinoma. In addition, Willis[23] mentioned three similar cases that he encountered among 7 necropsies, an unusually high percentage.

Cardiac Cirrhosis.—The lesion known as cyanotic induration of the liver, central or cardiac cirrhosis may arise as a result of any form of heart disease which is attended by failure of the right ventricle and subsequent retrograde determination of blood into the central veins of the liver lobules followed by destruction of adjacent liver cells and their replacement by connective tissue. Cardiac cirrhosis may occur in a variety of conditions, including chronic valvular disease, emphysema, productive interstitial pneumonitis and in the tetrology of Fallot, a combination of congenital abnormalities consisting of interventricular septal defects, dextroposition of the aorta, stenosis of the pulmonary artery and hypertrophy of the right ventricle. Cardiac cirrhosis of the liver develops gradually. The earlier changes are those of simple chronic passive congestion attended by densely packed red cells in the central veins. At this stage the liver lobules are deep bluish-red at their centers and pale at their borders, the whole presenting a striking resemblance to the cut surface of a nutmeg, hence the designation "nutmeg liver." At a later stage, the liver cells immediately adjacent to the central veins undergo atrophy from pressure, disappear and are replaced by overgrowth of connective tissue. The liver at first is increased in size and, except for congestion, presents no noteworthy changes. When, however, cirrhosis supervenes the organ is diminished in size, moderately coarsely nodular and firm. Since the anatomic changes are much the same as those of Laennec's atrophic cirrhosis, although of different genesis, it follows that the symptoms and signs are likewise the same. In addition to the symp-

toms and signs due to associated conditions, cardiac cirrhosis is accompanied by gastrointestinal symptoms and by the mechanisms which produce hematemesis, jaundice and ascites. Gastrointestinal symptoms usually occur in the form of digestive disturbances, notably nausea and vomiting, especially in the morning. Hematemesis is due to the rupture of esophageal varices, jaundice to obstructive changes in the biliary drainage system and ascites to similar changes around the central veins and hepatic radicles followed by portal obstruction. Ascites may be severe, but jaundice is apt to be mild.

"Parasitic" Cirrhosis.—One of the most important of parasitic diseases is caused by the blood fluke, Schistosomum hematobium or Bilharzia hematobia. The disease is prevalent in North and South Africa, especially in Egypt but also in the Sudan, Ethiopia, the Congo and Rhodesia, as well as in Arabia, Persia, the west coast of India, Madagascar, Puerto Rico and occasionally in Australia and the United States. In some countries, schistosomiasis causes more sickness and death than any other single disease. It has been estimated, for example, that six million of the twelve million inhabitants of rural Egypt are infested with S. hematobium and three million with S. Mansoni and that at least one and a half million are infested with both species together. Cirrhosis of the liver is among the causes of disability occasioned by these parasites. In Egypt, W. St. C. Symmers[24] has described a variety of cirrhosis attended by the presence of the ova of Bilharzia. It is characterized by enormous thickening of the periportal connective tissue and is sometimes called the "pipe stem" cirrhosis. In China and Japan and in the Philippines there is a disease known as Asiatic schistosomiasis which is characterized by cirrhosis of the liver, splenomegaly, ascites, dysentery, progressive anemia and sometimes by focalized epilepsy. The disease occurs extensively in one district of Japan where it is designated "Katayama" disease. It seems that Asiatic schistosomiasis or, as it is otherwise known, urticarial fever, is not uncommon in these countries and is associated with the presence of the parasite in the vessels of the alimentary canal and elsewhere, and with eosinophilia, urticaria and fever. Cirrhosis of the liver together with its attendant ascites is usually a late manifestation, occurring from three to five years after infestation.[25] Another form of parasitic cirrhosis of the liver is to be found in different parts of the world and is caused by the deposition of schistosome eggs in the liver, the ova acting as foreign bodies which give rise to granulomas associated with the formation of multinuclear giant cells of the Langhans type. In this connection, it is to be recalled that until the year 1926 Cutler[26] was able to collect reports of only twenty-two cases of schistosomiasis occurring in the United States and Canada. However, that the incidence of the disease is apparently increasing in North America is indicated by the fact that since 1933 five cases of schistosomiasis have been subjected to necropsy at Bellevue Hospital. All of them occurred in Puerto Ricans or in Latin Americans. In four cases the livers showed the naked eye changes of atrophic cirrhosis. The weights of the cirrhotic livers were 960, 1500, 1780 and 1950 gm., or an average of 1547 gm., a weight slightly above the normal for an adult male. Microscopic examination of the liver showed marked overgrowth of connective tissue in the periportal spaces where it not only surrounded but invaded the lobules, dividing them into smaller islands of cells. In occasional instances, individual liver cells were surrounded by connective tissue in much the same fashion as in the pericellular cirrhosis of congenital syphilis. Lying in the perilobular connective tissue were variable numbers of granulomas containing ova. Some of the ova were well preserved, others were in different stages of disintegration, while still others were calcified. The better preserved ova presented lateral spines and in this respect were easily distinguishable from the ova of bilharzia in which the spines are located terminally. In the periportal connective tissue of the cirrhotic livers in schistosomiasis, tubercle-like formations may be observed occurring around foreign bodies in the form of ova. The histology of the foreign body granulomas varies considerably. In some of them the ova are centrally placed and are partially or almost completely surrounded by multinuclear foreign body giant cells of the Langhans type together with variable numbers of lymphocytes, plasma cells, eosinophiles and polynuclear neutrophiles, while at the extreme periphery there are numbers of circumferentially arranged epithelioid cells, the whole resembling the exudative tubercle in the early stages of repair. In still other instances, the tubercle-like bodies show one or more ova and are practically completely converted into localized collections of poorly cellular fibrous tissue; in other words, the granulomas are apparently healed. Still another variety of cirrhosis is believed by some to be due to infestation by Clonorchis sinensis, a liver fluke most commonly encountered among the Sino-Japanese. Primary enlargement of the liver is followed by cirrhosis of the Laennec type and by chronic diarrhea, ascites, cachexia and death. Finally, when cirrhosis of the liver occurs as an associated phenomenon in parasitic diseases, such as schistomiasis and bilharziasis, one should consider dietary deficiencies as contributing factors. It is scarcely conceivable that relatively innocuous foreign bodies such as ova, acting alone, are capable of causing widespread perilobular cirrhosis of the liver.

### *TREATMENT*

In view of the fact that alcohol is a contributing factor in the production of Laennec's atrophic cirrhosis, it follows that, in the treatment of this disease, alcohol should be withdrawn entirely or used in moderation. Since dietary deficiencies are also to be invoked, it likewise follows that treatment should be directed to the replacement of such deficiencies by a well balanced regimen, including the administration of appropriate vitamins, notably B complex. According to Ratnoff and Patek, "In a preliminary report on

13 patients with cirrhosis of the liver, Patek found marked evidence of malnutrition, and specifically signs of lack of the Vitamin B complex. The diets of the patients were found to be deficient in meat and dairy foods. When the patients were fed a highly nutritious diet, ample in these foods and supplemented by Vitamin B concentrates, the clinical improvement that followed seemed outside chance expectation. These findings were confirmed and extended in a report on 54 patients observed during a four-year period. Similar favorable results of therapy with a nutritious diet and vitamin concentrates have recently been reported by Snell in 50 cases of cirrhosis." To relieve ascites resort must often be had to paracentesis. However, if, after one or more paracenteses together with the correction of dietary deficiencies, ascites is permanently removed, it may be impossible to determine whether one of the two procedures was responsible, or both.

The importance of treating hepar lobatum by the use of antisyphilitic drugs is obvious and similar therapeutic measures would seem to be indicated in those cases of Laennec's atrophic cirrhosis in which syphilis is reasonably to be incriminated. On the other hand, treatment is of no avail in the pericellular cirrhosis of congenital syphilis and in the juvenile variety of atrophic cirrhosis of the liver which occurs as a familial disease likewise in subjects of congenital syphilis, sometimes with signs of progressive degenerative lesions of the lenticular nucleus (Wilson's disease).

In the treatment of those forms of cirrhosis of the liver which are said to be due to the ova of schistosomes or of bilharzia, one should give consideration to dietary deficiencies as contributing factors.

In the hypertrophic cirrhosis of Hanot, in hypertrophic alcoholic fat cirrhosis and in the biliary, pigment and cardiac cirrhoses, treatment is futile.

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# CANCER

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## CANCER OF THE ORAL CAVITY*

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Malignant tumors of the oral cavity comprise a considerable percentage of the cases seen in our Cancer Clinic. In this region of the body, early detection of lesions favorable for treatment can be accomplished by education of the public and by thoroughness in diagnostic procedures on the part of the medical profession. Cancer in and about the mouth can readily be seen and is easily accessible for biopsy. A persistent attitude of securing microscopic examination in all suspicious lesions will be rewarded by an increasing yield of curable cases.

While most of the malignant tumors of the oral cavity are epidermoid carcinomas, their clinical course, treatment and prognosis varies greatly in relation to their location. It is, therefore, of importance to describe separately the tumors in the several anatomic regions of the mouth.

### LIP

Cancer of the lip forms about one-third of oral cancers in this area. The typical patient is an elderly white male who has lived an outdoor life and who presents a chronic lesion on the lower lip. Few patients are under 60 years of age. The incidence is low in white females and rare in Negroes of either sex.

Predisposing factors include chronic over-exposure to sun and wind. The use of tobacco in the form of cigarettes or pipe has not seemed important in our cases of lip cancer, although pipe-smoking has been implicated as a possible source of irritation in intra-oral cancer. Woman's "place in the home" may have protected her from the carconogenetic effects of the insults on exposed surfaces by out-of-door elements. There are also those who suggest that the lubricating and ray-filtering action of lip-stick may help protect against chronic drying and irritation. Many cases of lip cancer give a history of long-standing areas of thickening or even ulceration on the vermilion border before apparent growth began. As one studies the microscopic picture of these chronic and apparently indolent lesions, one thinks of them more and more in terms of latent cancer or carcinoma in situ rather than simply potentially pre-cancerous changes from chronic irritation .

The gross appearance of cancer of the lip may be that of an indurated ulcer or fissure. It may protrude externally as an exophytic growth which may be covered with intact epithelium or may rapidly fungate. In other instances, it may spread along the lips as a warty growth. Histologically, the majority are epidermoid carcinomas of low grade malignancy. Lymphatic extension occurs in the submaxillary area first. However, few early cases show any palpable lymph node enlargement.

The treatment of cancer of the lip in the early and curable stage is a matter of some controversy. Either radiation or surgery can produce a cure-rate of over 90 per cent provided the treatment is *adequate*. If X-ray is chosen, a truly cancericidal dose of 3,000 to 6,000 R should be applied. When small doses are given, at intervals, to lesions without biopsy confirmation, the results are frequently disastrous. It is the author's preference to perform a V excision of the lip with an adequate margin. This is done under local or regional block anesthesia and produces little deformity. Plastic procedures such as the Estlander flap may be necessary for larger lesions near the corner of the mouth. Subsequent minor cheioloplastic procedures minimize any cosmetic deformity. Surgical excision not only provides the opportunity for the most accurate histologic appraisal of the tumor extension but also gets rid of the whole lesion at one fell swoop.

As regards the handling of cervical lymph nodes, most observers advise an attitude of watchful waiting in those cases in whom no enlargement is palpable. Prophylactic neck dissection carries a certain morbidity and mortality. Very few will show involvement with cancer. On the other hand, those cases showing lymph node involvement, at the time of primary treatment, should have at least a supraomohyoid block removal of the nodes.

The results of adequate treatment in cancer of the lip are gratifying. Eckert reported that 94 per cent of cases treated by V excision showed no local recurrence. Hayes Martin states that in early cases with lesions of 1.5 cm. or less in size, the cures should be practically 100 per cent. He reports a five year cure rate of 70 per cent for all cases including the most advanced.

### TONGUE

Cancer of the tongue is a much more difficult problem. The degree of malignancy clinically is higher than in the lip. Lymphatic spread is more frequent and less accessible to excision. The chief predisposing factor in our experience has been poor oral hygiene, especially chronic irritation from ragged teeth. Lues has long been implicated but we see remarkably little chronic luetic glossitis in proportion to the high in-

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cidence of Negroes with positive serology in our patient population. The diagnosis is usually not difficult on ordinary inspection and palpation. It should be confirmed by an adequate biopsy.

Since these cancers are rarely small enough or situated near the tip so that primary wide excision is readily done, we have preferred radiation treatment initially. Interstitial radiation with radon seeds or small radium needles is the treatment of choice in most instances. Some cases lend themselves to direct X-ray through an intra-cavitary cone. Others, such as those on the floor of the mouth, may be treated through external ports. After maximum clinical regression following interstitial radiation, it is desirable to excise the area surgically, since one finds residual nests of cancer cells in many cases.

The problem of lymphatic extension is severe, since the nodes involved are deep and frequently bilateral. We have preferred to depend upon heavy Xirradiation in all cases regardless of whether nodes are palpable or not. The cure rate in cancer of the tongue is low, about 25 per cent, even in the most expert hands. The best approach at present is prevention. More adequate dental care for our indigent would do much to diminish the incidence of cancer of the tongue and oral cavity generally.

## BUCCAL MUCOSA AND GINGIVA

Much that has been said concerning cancer of the tongue applies also to the buccal mucosa and gums. Here chronic irritation from tooth fragments, improperly fitting dentures, and oral sepsis are important causative factors. Leukoplakia or ulcerations frequently precede the recognition of cancer over a long period of time. It is necessary to take biopsies to rule out cancer in many instances. Removal of all sources of irritation is most important in prevention. Close collaboration between physician and dentist is helpful in this regard.

Treatment of cancer of the buccal mucosa is varied. Small lesions may be excised locally followed by radiation. Surface application of a radium plaque with low filtration has been used in somewhat larger lesions. Cancer of the gum along the alveolar margins has been most difficult to treat satisfactorily. In the lower jaw, radical excision of the mandible combined with neck dissection has been advocated. In our hands, the immediate results of such an approach have been satisfactory but the recurrence rate has been very high. Possibly, we have not been sufficiently radical in these excisions. On the other hand, recent studies in exfoliative cytology make one wonder what role implantation of desquamated nests of cancer cells might play in producing recurrence. Whenever feasible, we have made an effort to coagulate the surface of fungating tumors, especially on the lip, at the beginning of operation. Phenol has been the most practical agent for this purpose. There is no evidence, however, that this procedure actually diminishes the chance of local recurrence. Excision of the upper jaw for carcinoma of the alveolar margin is not too formidable a procedure in proper hands but, again, a high rate of recurrence is present.

Because of the difficulties of securing satisfactory results by excisional surgery, radiation has been widely used and applied in various ways. This has entailed extraction of all remaining teeth. Radiation has produced worthwhile palliation in many instances but, as with surgery, the cure rate has not been impressive. Since cancer of the alveolar margin presents such a grim picture, it is important to distinguish from cancer the various forms of epulis, a benign lesion responding to adequate local surgery. Again, adequate histologic study is the sine qua non of rational therapy.

## DISCUSSION

In the lower jaw, carcinomas arising along the alveolar margin may invade the mandible and create difficulty in differential diagnosis by X-ray from tumors primary in the jaw. Most of these latter tumors are essentially benign, although the adamantinomas carry a high chance of recurrence and the rarer osteogenic sarcoma and Ewing's tumor are truly malignant.

Over the hard palate, true epidermoid carcinoma is unusual. Most growths here are mixed tumors of salivary gland origin. There are also enlargements on the palate of non-neoplastic origin.

In summary, one may say that cancer within the oral cavity is most difficult to treat and that only about 25 per cent of cases, as they now present themselves to cancer clinics, have a chance of permanent cure. The best approach to this problem is prevention and in earlier eradication of potentially cancerous lesions. On the lip, a high percentage of cures are obtained by adequate treatment even under present conditions.

## REFERENCES

1. Ackerman, L. V. and Regato, J. A. Cancer, Diagnosis, Treatment and Prognosis, Mosby 1947.

2. Christopher, F. Textbook of Surgery, Saunders 1945.

# TENTATIVE PROGRAM
# SOUTH CAROLINA MEDICAL ASSOCIATION
# MYRTLE BEACH
# MAY 16, 17, 18

TUESDAY, MAY 16, 1950

10:30 A. M. House of Delegates
8:00 P. M. Entertainment

WEDNESDAY, MAY 17, 1950

9:30 A. M. Dr. Rowland F. Zeigler, Florence
"Obstetrical Problems"

10:00 A. M. Dr. David F. Watson, Greenville
"Office Gynecology"

10:30 A. M. Dr. Manly Hutchinson, Columbia
"Elective Gynecological Surgery"

11:00 A. M. Dr. E. C. Kinder, et al., Columbia
"Bilateral Polycystic Ovaries"

11:25 A. M. Memorial Service

11:30 A. M. President's Address—Dr. Roderick Macdonald, Rock Hill

12:00 Noon Dr. Austin Smith—Editor, Journal of the A. M. A.—Guest Speaker

Alumni Luncheon

2:30 P. M. Dr. J. H. Marshall, Charleston
"Behavior Disturbances in Children"

3:00 P. M. Dr. Sam Elmore, Spartanburg
"Diabetes in Children"

3:30 P. M. Dr. Wilson Ball, Columbia
"Congenital Syphilis and the Prenatal Blood Test"

4:00 P. M. Dr. O. B. Mayer and Dr. D. C. Mitchell, Jr., Columbia
"Iron Deficiency Anemias"

4:30 P. M. Dr. Barnes Woodhall, Duke Medical School—Guest Speaker

7:00 P. M. Banquet and Guest Speaker

THURSDAY, MAY 18, 1950

9:30 A. M. Dr. John Boone, Charleston
"Congenital Heart Disease"

10:00 A. M. Dr. John F. Rainey, Anderson
"Cardiovascular Problems of the Aged"

10:30 A. M. Dr. Ben Miller, Columbia
"Chronic Pulmonary Problems"

11:00 A. M. Dr. Russell Cecil, New York—Guest Speaker

12:00 Noon Dr. Myers H. Hicks, Florence
"Treatment of Lower Nephron Nephrosis"

12:30 P. M. Adjournment

The Journal of the South Carolina Medical Association

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Please send in promptly notice of change of address, giving both old and new; always state whether the change is temporary or permanent. Original manuscripts, subject to approval by the Editor and the Editorial Board, are desired for publication in the Journal. They should be typewritten, double spaced, on 8½ x 11 paper. References should be complete, and only such as relate directly to statements quoted in the paper. Illustrations will be used as funds permit, or as authors are willing to bear the necessary increase in cost. Short original articles are preferred to long reviews.

Office of Publication: (In care of the Editor) ---------- Florence, S. C.
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## APRIL, 1950

### ANNUAL MEETING

The one hundred and second annual meeting of our Association will be held at Myrtle Beach, May 16, 17 and 18. All indications point toward a memorable occasion.

The guest speakers are men who are pre-eminent in their fields—Dr. Russell Cecil, Dr. Austin Smith, Dr. Barnes Woodall. The rest of the program as arranged by Dr. Hugh Smith and his committee is directed toward the everyday problems of the practitioner of medicine.

The counties of the seventh district are planning a social occasion for the evening of the 16th which will not soon be forgotten. The annual banquet and President's Ball will be held the following night.

The House of Delegates will hold its annual session on the 16th with Council meeting the day before.

The commercial exhibitors will be present in full force, every available space having been spoken for.

Advance reservations have been heavy but the manager of the Ocean Forest Hotel is endeavoring to see that everyone has a room. When the capacity of the hotel is reached other arrangements will be made.

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### FUN AND FROLIC

What was once a rather dull evening at the annual meeting of the Association has now become one of the social highlights of the occasion. We refer to the activities on Tuesday night following the all day session of the House of Delegates. In times past, this has been an evening of "doing nothing," but this has all been changed. Now the host society exerts every effort to make it a time for fun and frolic.

From what we have heard, the entertainment arranged for this year will be second to none. The county medical societies of Sumter, Lee, Clarendon, Williamsburg, and Georgetown have spared neither effort nor expense in preparing for the occasion. They have secured the services of nationally known Shep Fields and his orchestra who will not only provide music for dancing but who will also present an hour long floor show. All members of the Association and their wives are invited to attend.

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### CARE OF THE INDIGENT

One of the most vexing problems in the field of medicine is that of securing good medical care for the indigent—by indigent we refer to that individual who cannot afford the monthly payment for Blue Cross, Blue Shield, or commercial insurance protection.

There is no uniform method in use in South Carolina for the care of this group. It is handled on a county basis, each county having its own plan. Some of these plans appear to meet the need relatively well, others are entirely inadequate.

Our Association has long been interested in this problem, listing it as Point 4 in our Ten Point Program. A special committee is now making an extensive study of the problem. It will be interesting to see what conclusions are reached and what recommendations made. We certainly hope something can be done to provide better medical care for the indigent in our state.

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### GEORGE H. BUNCH

The entire state was shocked by the sudden death of Dr. George H. Bunch, who died on March 6, 1950. He was not only beloved for his kindly and unselfish nature, but for his readiness to help others by his skill. Perhaps no surgeon in South Carolina gave more unstintingly of his services to so many.

After graduation from the University of Michigan Medical School he located in Columbia and became associated with Dr. LeGrand Guerry. It was but a short while until his surgical skill was apparent. His ability as a general surgeon was outstanding. The most difficult operations were performed successfully, and his reputation was quickly and justly established. He made rapid and accurate decisions and carried them out forthwith. His vigor and endurance were frequently evidenced, for he never put off rendering aid when needed, working long and arduously, day

and night. His chief concern was to give the patient his best chance. Mercenary consideration was unimportant. Rich or poor, white or black received his best. He not only had a large local following, but doctors from the state at large referred cases to him for surgery. His surgical accomplishments and writings were numerous and placed him as one of South Carolina's most outstanding medical men.

He not only wrote originally, clearly and accurately, but he spoke directly, convincingly, and with vigor and authority. Consequently he was frequently invited to address medical gatherings.

These sterling qualities led his fellow doctors to bestow their societies' highest honors on Dr. Bunch. He was accordingly President of the Columbia Medical Society, the South Carolina Medical Association, and the Tri-state Medical Association. He acted as continuous Chief of Staff at the Baptist Hospital for 27 years. Concurrently with this he was at one time Chief of Staff at the Columbia Hospital, and at another time at the Providence Hospital.

As a citizen he was equally admired and loved. His integrity, high ideals, and consideration of others were legend. Few men could carry on with so full a surgical practice, play strenuous tennis two afternoons a week, return for evening hospital rounds and surgical emergencies, and top off the evening with medical reading, writing or a game of bridge! He seemed never to tire. His interests were wide, his mind retentive and alert.

The memory of Dr. Bunch will always be treasured by the many who knew and loved him. He was truly a great surgeon, scholar, and gentleman. The South Carolina Medical Association has lost a great friend. The Association deeply sympathizes with the family in their great loss!

O. B. M.

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## REPORT OF FIFTH ANNUAL NATIONAL RURAL HEALTH CONFERENCE

On February 3rd and 4th of this year it was my privilege to attend the "Fifth National Conference on Rural Health" held at Kansas City, Missouri. I attended this and previous conventions on behalf of the South Carolina Medical Association and the South Carolina State Board of Health. I consider this a privilege and a high honor and am deeply grateful to both. These conferences are always interesting, educational and provocative. Anyone who attends is certain to come away with a much broader view of the rural health problems which confront our country.

The morning of the first day was largely devoted to addresses by well known speakers. After the welcoming by Dr. George F. Lull of Chicago, Secretary and General Manager of The American Medical Association, Dr. F. S. Crockett, Chairman of the Committe on Rural Health, a charming gentleman and able leader, discussed current rural health and medical problems, and their solution. His address was entitled "Let's Do Something About It." Mr. Paul C. Johnson, Editor of the Prairie Farmer and Dr. Lewis W. Jones, Predisent of the University of Arkansas, also made addresses. Dr. Jones pointed out that agricultural extension services can be closely connected to the problems of rural health, while Mr. Johnson discussed rural medical facilities at the local level. Dr. J. P. Sanders, Vice President of the American Academy of General Practice, spoke on "The Methods of Prepayment for Health Services in Rural Areas?" and Dr. Franklin D. Murphy, Dean of The University of Kansas School of Medicine, emphasized the fact that the Medical School have a responsibility in the rural health program.

Shortly before noon, at the conclusion of these addresses, Mr. Paul A. Miller, Extension Specialist in Rural Sociology and Anthropology from Michigan State College, presented the plan which was followed in the group discussions.

Five general groups were formed, each group being divided into two sub-groups, each under a chairman. After one hour of discussion, in which I took part in the discussion in two groups, in which the sub-groups joined forces, and under a leader and a general chairman, debated the points which each group had previously discussed.

That evening a panel debated the topic "How to get Medical Care to Rural People" with Dr. Frank W. Peck, Managing Director of the Farm Foundation, acting as Moderator of the panel.

The following morning, Saturday, a member from each of the groups from the previous day, made a report on what each group had accomplished. Following this, Dr. Roger B. Corbett, Agricultural Council for the National Association of "Food Chains" with headquarters in Washington, D. C. gave a general summary of the points brought out by all discussion groups. Surely much good had to result from this integrated program.

Those attending this conference came from five principal groups, those groups being: family physicians, members of farm organizations, staff members of hospitals, members of Public Health Service, and members of the Agricultural Extension Service.

As one would expect, a group of this size, composed of so many different types of representatives did not reach complete agreement upon all points which were discussed. Nevertheless, many important points were brought out which are worthy of discussion. For example, Dr. Ernest E. Dorns, President of the American Medical Association, brought out the fact that the comparatively small number of doctors in our country today is in reality possibly something of a blessing in disguise. Medical Schools are only about half as numerous as 60 years ago, but their standards have risen to the point where "diploma mills" for doctors no longer exist in real Medical Schools. There

are other, so called medical schools turning out practitioners of various types of which we are all aware.

All doctors receive complete and adequate training and thus the people receive a higher quality of medical service than has ever before been administered.

Another factor often overlooked in considering the shortage of doctors for instance, is the fact that one doctor can tend more patients than a few decades ago. Improved transportation and good roads has brought the doctor much closer to outlying areas than in the horse and buggy days. As communication and transportation facilities have improved, really fewer doctors are able to care for more patients, etc.

All members of the Conference agreed that no rural health program would be sound unless it springs from the community itself. The problem is to educate and stimulate the people so that they will want to do things for themselves, instead of folding their arms and waiting for outside aid. This is a very important point to remember for young doctors often do not settle in rural communities because the facilities to which they are accustomed, in colleges and hospitals, are not available. Community financed health centers and clinics containing modern equipment would be a powerful inducement for attracting medical talent to small town-rural communities.

Several instances of what communities have done in this line were mentioned. Various plans were discussed concerning methods to help communities plan suitable health programs. The possibility of state Health Staffs working with extension agents and rural leaders was one such plan proposed and another advanced was for local health councils to be formed on a large scale to study medical needs. It was emphasized, however, that if such a council were formed, it would be necessary to operate strictly at a local level in order to meet varying needs of different sections and communities. The Conference agreed that it is theoretically desirable to provide complete health insurance covering every phase of sickness by man, but the majority agreed that such a program is not feasable and is not essential to meet the basic needs of health security. It was generally agreed that few volunteer prepayment plans afford sufficient health coverage and that many people are not able to afford this type of protection. If necessary, tax funds should be used to help these people. It is being used for much less important purposes. Most of the conference felt that the Federal Government should be kept out of these ventures, since needs are far more personalized when applied locally, than when paid through federal taxes. In addition, there is less waste, more economy and a far better understanding of local needs.

One of the main points brought out at this convention is that the job of maintaining adequate health facilities is not a job for the doctors alone. Civic groups, churches, schools, newspapers, businessmen and members of the professions have an equal stake in the matter. It is their duty as well as the doctors to see that the needs of the community are met in matters of health. Working together, they can accomplish a great deal more than the doctors can alone.

The conference was brought to a close at a luncheon meeting early Saturday afternoon. Dr. Dorns, President of the A. M. A. gave an address, which was able and impressive. Dr. Kenneth McFarland, Supt. of Schools at Topeka, Kansas, delivered one of the most eloquent, witty and profound addresses it has been my privilege to hear.

I should like to reiterate that it was both an honor and a pleasure to attend this great conference. The outstanding people who attended brought out many interesting facts and suggested possible solutions to the rural health problem.

I appreciate the privilege of associating with them and feel that I have gained new insight into rural health problems through this association.

A. W. Browning,
Elloree

## REPORT ON NATIONAL CONFERENCE ON MEDICAL SERVICE—FEB. 5, 1950

Philip E. Adams, D. D. S.,
Pres. American Dental Association

The dental and the medical associations are sisters. Whatever happens to the physicians will inevitably apply also to the dentists. The dental profession supports the medical profession in its stand and approves its methods.

George F. Hull A. M. A'S Public Educational Program to date

The program is getting results. The outlook is better now than it was at this time last year. Under voluntary health insurance

61 million are insured for hospital services,
34 million for surgical and obstetrical services,
13 million for medical services.

The fight is not over and we must continue our efforts.

Harvey Stone, M. D., Co-ordinator Committee on Legislation of the A. M. A.

The purpose of this committee is to analyse bills presented in Congress that in anyway affect the medical profession and to recommend what the A. M. A should support or oppose. The doctors were urged to enlist the support of other people interested in it. He especially asked for help from the clergy.

H. R.—6000—Should be opposed.
S1411—Hill & Samders—Should be opposed.

Dr. Ernest E. Irons, President, American Medical Association

Dr. Irons gave a short but excellent address opposing what he termed "creeping socialism." The attack on the practice of medicine is only one phase of this insidious type of socialism. He opposed the present trend to loaf and spend rather than work and save.

Dr. Henderson, President-elect,
American Medical Association

Dr. Henderson was called on to say a few words. He felt that a great deal had been accomplished in the last 12 months. The outlook is better now than it was this time last year. The profession is united.

Mr. Ray Murphy, "Problems Arising in Meeting the Challenge of Compulsory Health Insurance"

The Life Insurance Companies have always steadily opposed compulsory health Insurance, not only because of the principle but for other reasons.

1. There is no health crisis contrary to what proponents of nationalized medicine say. Since 1900, 1-1/4 million people have been saved that would have died. Infant mortality has decreased by 1/2 in 20 years and maternal mortality similarly. These are facts and not speculations. The medical profession should boast about it, not apologize.

2. People should be taught that Government can't give us anything that isn't paid for by the taxpayers.

3. The Tax has increased until eventually the people who are supposed to be helped by the tax are taxed themselves.

In Great Britain taxes are now 40% of the national income and already the people for whom the tax was levied are being taxed. In the United States the taxpayers are paying in taxes 27% of the national income and the budget is still not balanced.

The present trend is an insidious give-away program and not only doctors but everyone interested in personal freedom should do everything possible to head it off.

Mr. Murphy discussed, at length, the acturial difficulties involved in voluntary health insurance. The Administrative cost of small fees is so great that the benefit is out of all proportion to the cost. He suggested that a deductible item might be put into the contract much as it is in a collision policy. This, of course, would be only for the general medical services—office or hospital visits by the physician. He did not think that it would ever be practicable to pay for home visits.

## PERSONAL OBSERVATIONS OF SOCIALIZED MEDICINE IN ENGLAND

Congressman James I. Dolliver, Iowa Member,
Sub-committee on National Health Insurance
Legislation of the House Interstate and
Foreign Commerce Committee

Mr. Dolliver spent all last summer visiting countries with socialized medicine. He spent most of the time in England and that's what he discussed. He is opposed to socialized medicine for several reasons:

1. THE COST—In England the estimated cost was 132 million pounds and at the last report it had cost 270 million pounds. Mr. Bevan who gave Mr. Dolliver these figures said that proved how much the people of England needed the socialized medicine. No proponent of nationalized medicine in this country can even give an estimate of the cost, but it varies between 4 and 20 billion dollars. It seems stupid to spend money like that when our budget isn't even balanced yet.

2. All hospitals were confiscated lock, stock, and barrel because the Labor Government said they were non-profit anyhow and so they would take title to them. Mr. Dolliver couldn't imagine the people of this country putting up with any such high-handed tactics. The Labor Union hospitals were not taken over by the government.

3. Socialized medicine would destroy the standards of medical excellence as it is doing in England. Time was when a physician went to Europe or England to take post-graduate studies, but no more. The U. S. leads the world in medical excellence and should do everything to preserve it. In England, a general practitioner is paid, not for service rendered but for the number of patients he has on his lists. Two doctors, practicing together, could work alternate months and receive the same compensation provided his associate did the work for him. At the other extreme a doctor sees briefly 90 patients a day in his office and them makes calls on 15 or 20 more if he can. The amount of paper work is staggering even for a few patients. At such a pace a doctor is soon worn out. He loses his diagnostic acumen, his interest, and his perspective.

4. Socialized medicine is a political move pure and simple. It is a powerful vote getter. The conservatives will not abolish it but

merely slow down the progress of the socialistic trend. No party dares stop it immediately. Mr. Dolliver hates to think that any group or party would stoop so low as to bring about socialized medicine but he wouldn't put it beyond the present party in the majority. There is no formal opposition to socialized medicine in England now. Lord Horder, physician to the king, heads a group of 3000 who form the Fellowship of the Friends of Freedom, but that isn't large enough to have any effect at all. Lord Horder sent a message, an urgent one, to the doctors in America. He said to meet this threat of socialization head on and show no mercy. Once the socialists get in power nothing can undo it. But Lord Horder urges the American Medical Association to clean its own house first.

Mr. Allan B. Kline was to speak about the farmer's reaction to Government Medicine but he was not present.

Mr. George Brand, President, American Judicature Society

Mr. Brand spoke on the preservation of the profession. What is harmful to one profession is harmful to all. The American Bar Association has gone on record and has repeated its stand against government in medicine. Mr. Brand, speaking for his society, pledged a continuation of the struggle against "creeping socialism." He also brought out the point that the profession of law is peculiarly protected against encroachment by socialists by the method of appointing or electing judges and other respected lawyers.

Dr. James Lawrence, Director, Washington Office of American Medical Asso.

All bills relating to medical practice were shelved when he spoke.

H R 6000—Medical profession is opposed to "complete disability phase" of this bill.

SECOND REPORT

Medical Program of the United Mine Workers of America

Welfare and Retirement Fund.

Warren F. Draper, M. D., Executive Medical Director

It was most enlightening to hear this man talk. The United Mine Workers Association is grateful, said Dr. Draper, for the mutual trust and co-operation between doctors, hospitals, drug stores and the pension fund. The U. M. W. A. takes care of hospital, doctor, and drug bills for those on pension or disabled lists. It pays for doctor bill at home as well as office or hospital visit. It also pays hospital and doctor bills while patient is in the hospital for working miners and their dependents up to 18 years of age. It does not pay for home and office visits of this group.

Public Health and preventative measures are much better than existed previously. The U. M. W. A. pays 6500 physicians, 600 hospitals (34,000 patients) and 1300 drug stores. It paid for 180,000 home and office visits.

Relations with physicians have been excellent. There is no fee schedule. The physician submits what he thinks is a fair bill and the U. M. W. A. pays it. Oddly enough the general trend of the cost is downward. No detailed costs are given out.

Dealing with such a large group of physicians there are bound to be some who will not stay in line with a fair charge and with other physicians of same training and capabilities.

1. Some doctors charge too much. They seem to try to make as much as they can while the going is good.

2. A few doctors have refused to take care of the miners or their families.

3. Physicians who treat a smaller number, as a rule, charge more.

4. Examples of excessive charges: In the average prepaid plan there are 4-1/2 visits per person per year. In the Washington Group Health Plan the average is 6 visits per year. In one physicians practice the average was 21 visits per year. One doctor who saw each patient of his in the hospital twice a day, and who stayed in the patients room no longer than 2 minutes, charged $5.00 per visit per patient. Obviously such charges are not fair. Dr. Draper was careful to state that these isolated cases of indescriminate charges are rare and his heart was filled with gratitude and appreciation which have been accorded the U. M. W. A.

He also stated that some of the charges made against the U. M. W. A. were so untrue that it seemed silly to even refute them. One in particular that the funds of the pension and retirement fund had been squandered upset him.

He further stated that Mr. Lewis, once the plan of medical payment had been decided upon, had never interfered. He had never even by implication suggested that state medicine would be better.

Mr. William H. Book, Indianapolis, Ind. Pres. Chamber of Commerce Executives

Mr. Book stated what everyone knows—that the Chamber of Commerce has been fighting every step toward socialized medicine. No one has struggled harder. He feels that socialism is more dangerous to this country than communism. He urges physicians to join and support their local Chamber of Commerce. He stated that we are all in this struggle for freedom together and we must stand together on every phase that the government tries to start that is socialistic.

No one can attend a conference of this kind without realizing that we are really at a crossroad and we must stand together or else do nothing and go down the road that England has taken. An important point to remember is, as Lord Horder has said, once socialism gets underway it's too late. We can't turn back.

George Dean Johnson, M. D.
Spartanburg, S. C.

# THE TEN POINT PROGRAM

M. L. MEADORS, DIRECTOR OF PUBLIC RELATIONS AND COUNSEL

## ESSAY CONTEST EVOKES SPLENDID RESPONSE

The essay contest sponsored by the South Carolina Medical Association for students in the high schools of the State, was well received and the response on the part of the students has been highly gratifying. At the close of the contest, a total of 328 essays had been received at the Association offices, and these are now in the hands of the judges. Announcement of the winners will be made about May 15th.

The subject on which the students were requested to write was "The Advantages of our Present System of Medical Care as Opposed to Compulsory Health Insurance." The announcement and rules of the contest were sent to all high schools in South Carolina—439. The approval of the State Department of Education was obtained in advance and this fact communicated to the high school principals to whom the contest material was directed. Through their cooperation, printed announcements were placed on Bulletin Boards, and contest rules and material containing information on the subject distributed to the students who wished to participate. Packages of material were mailed under separate cover at the same time to each of the high schools. Most of this material consisted of pamphlets prepared by Whitaker and Baxter, although additional copy derived from other sources and mimeographed in the Association office in Florence, was likewise included.

The Council approved the contest at a meeting in January and made the appropriation of $225.00 to be distributed in prizes. The project was turned over to the Department of Public Relations for execution and from that point forward was handled in its entirety by this office, under the supervision of a contest committee consisting of Dr. J. Howard Stokes, Florence, Chairman, Dr. J. I. Waring of Charleston, and Dr. R M. Pollitzer of Greenville. The contest opened March 1st and closed March 21st. Essays were limited to 500 words in length and are to be judged on the basis of originality of ideas, clarity of thought, sincerity and grammatical composition. Nine prizes will be awarded as follows: First prize—$75.00; second prize—$50.00; 3rd prize—$25.00; 4th, 5th and 6th prizes—$15.00; and 7th, 8th and 9th prizes—$10.00 each.

The general success of the contest indicates the advisability of a repetition in future years. It is clearly evident that the interest of the students has been stimulated and their thinking and research on the subject of socialized medicine has been encouraged. The ideas expressed in most of the essays, of course, generally were those which have been voiced over and over by adults, but occasionally there is to be found a rather original slant and it is entirely possible that out of this combination of expressions on the part of the younger generation, there could develop additional potent arguments against the Administration's proposals for the regimentation of the practice of medicine.

Suitable exercises will be arranged for the presentation of the awards.

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## BLUE SHIELD BEGINS OPERATION

The writing of Blue Shield Contracts has begun. The first issue of descriptive material on the joint coverage of Blue Shield and Blue Cross Plans has come from the press and it presents a very attractive and impressive picture.

At a meeting of the field staff in Columbia on Monday, March 20th, the members were briefed on Blue Shield contracts and their presentation to the public. Coverage under Blue Shield commenced as of April 1st.

Holders of both Blue Shield and Blue Cross contracts will receive the protection provided thereby for a total cost of $4.65 per month for the family contracts and $1.85 per month for the individual contracts. Both types of contract are written and serviced by the same administrative staff as that of the South Carolina Hospital Service Plan, Mr. Allen D. Howland, Executive Director, with headquarters at 9 South Main St., Greenville, S. C. Branch offices are located at 128 N. Converse St., Spartanburg, S. C., and 44-B George St., Charleston, S. C. In addition, field representatives are maintained without branch office status in Florence, and elsewhere.

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## CATASTROPHE COVERAGE*

One criticism which proponets of socialized medicine have leveled at voluntary programs of sickness cost insurance has been that the long-term chronic diseases are not covered, that the member suffering from a condition which by its very nature is bound to last a long time cannot receive care for the disease under the voluntary plans.

Voluntary sickness cost insurance is a relatively new member of the insurance family in the United States and, from all indications, a lusty, growing child. Both the physician-sponsored and the medical association non-profit plans have undergone a tremendous growth within a space of only a few years. As witness, our

*Reprinted from California Medicine, March 1950.

own California Physicians' Service has grown from 125,000 to more than 900,000 beneficiary members in less than five years.

With the growth in membership, C. P. S. and other voluntary plans are in a position to delve into new and unexplored types of coverage, their ability to do so springing from the fact that their financial position is secure to the point where a potential loss from a new type of service may be absorbed by the regular program. In this way a number of innovations have been developed, founded on actuarial experience and offered on an economically indicated basis which has later proved to be accurate in the light of experience. Such progress furnished additional actuarial material as a basis for still further advances.

Latest item in this progressive movement is the announcement by California Physicians' Service of the addition of catastrophe coverage to its group contracts. For a small addition to the regular monthly dues, C.P.S. is now offering medical and surgical care for a list of 23 diseases or conditions for a period of a full two years or to a maximum expenditure of $5,000, whichever is reached first. The diseases covered are cancer, poliomyelitis, rheumatic fever, diabetes, osteomyelitis, tuberculosis and others in the chronic disease classification. The conditions include severe fractures and severe burns.

Here is pioneering at its best. C.P.S. does not know what the cost of this offering will be; however, it believes it knows this cost closely enough to warrant offering this new coverage to its members. If the advance calculations prove to be wrong, changes will have to be made; on the other hand, if the program can more than carry itself financially, it will be possible to add to it in service or to reduce the dues paid for it. Thus the beneficiary members stand to gain in service if experience proves the accuracy of the advance actuarial calculations; they will not be called upon to underwrite a deficit if the cost of care turns out to exceed the dues paid during the trial period.

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## A G. P. SPEAKS*

One of the dangers inherent in a materialistic society such as ours is that an effort to secure creature comforts the people forsake ideals which in the long run are more essential to their happiness and well being than worldly goods. Whether they like it or not, doctors cannot escape this situation. They, too, are part of a highly competitive society which measures success in dollars. However, they are also engaged in a pursuit which is best described as a high calling. That is something doctors must never permit themselves to forget.

Dr. Steve P. Kenyon of Dawson, Georgia, spoke plainly on this subject in the Chairman's Address before the Section on General Practice of the Southern Medical Association last November. Dr. Kenyon said:

"We need an old time revival in which we can reaffiirm our faith in the oft-forgotten creed of service. We need to acknowledge again the priceless heritage that is ours as American physicians and accept the responsibility of upholding the tenets and creeds that are as fundamental to the survival of medicine as the Constitution is to our Union of States and the Ten Commandments to the Christian religion.

"It seems to me that if we are to survive as democratic doctors in a democratic country we must preserve our place in the hearts and minds of our people. In furtherance of that goal, I am bringing to your attention what I believe to be some of our responsibilities to our people:

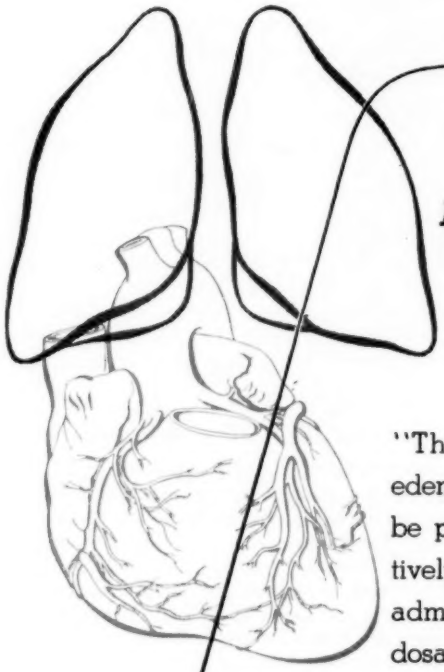
"(1) From the beginning of time the most important factor in the building of any structure is a firm foundation. So it is in molding a man into a good physician. He must have a high moral character; he must be honest with himself and with his patients. How truly Shakespeare wrote when he said: "To thine own self be true and it must follow as the night the day thou canst not then be false to any man.' To my sorrow I have known three doctors who were dishonest. They were brilliant mentally; they had good personalities and they were good students; yet they not only brought dishonor to our profession, but wreck and ruin to their families and themselves. I believe the credentials committees of our medical schools should be most concerned and most careful about the character of every applicant to their institutions.

"(2) The Bible speaks of 'The Beloved Physician.' He was a Christian, and if my knowledge of medical history serves me right the great physicians of the world put their faith in our Lord. How wonderful it has been to know personally some who prayed before every operation, and some who, when their medical knowledge and scientific wisdom failed to save the life of a patient, prayed to the Lord for guidance and direction. If I were the desperately ill patient, I would prefer that my physician believed in the instrumentality of prayer. In speaking of 'My Faith,' J. R. Killian, Jr., President of the Massachusetts Institute of Technology, said: 'The good life rests upon a working partnership between science and religion.' He said further:

" 'My conviction also deepens that the understanding of good and evil, the attainment of wisdom by individuals and societies, is impossible without a lofty sense of the meaning of life and that this lofty sense is achieved only through combining an understanding of nature with an appreciation of what men call God.'

"(3) Another prerequisite of a good physician is the ardent belief in the responsibility of citizenship. The title M. D. does not make null and void one's duty to his community, to his state, or to his nation. On the contrary, the confidence in which he is held by the public eminently qualifies him to be a leader in the progressive and worthwhile undertakings of his

*Reprinted from the Medical Annals of the District of Columbia, March, 1950.



## *PULMONARY EDEMA AND PAROXYSMAL CARDIAC DYSPNEA*

"The development of pulmonary edema at night may in certain cases be prevented and in addition effectively treated by intramuscular . . . administration of aminophyllin in dosages of 0.5 Gm."[1]

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*SEARLE RESEARCH IN THE SERVICE OF MEDICINE*

1. Barach, A. L.: Edema of the Lungs, Am. Pract. 3:27 (Sept.) 1948.

people. Such a man is needed in the civic club, in the school, in the local government, and in the church.

"(4) It is my sincere belief that every holder of the degree of doctor of medicine should esteem it a privilege to affiliate with organized medicine in all its phases, from the county medical society to fellowship in the American Medical Association.

"(5) When we study the lives of the great men of medicine, we find that among their outstanding traits of character was their unerring custom of living ethically with their fellow doctors. Much of the abuse of doctors and many of the lawsuits against them were originated by the vicious criticisms, or insidious slurs of some other doctor. Ethics of medicine is simply the Golden Rule of Medicine, and it is one code that we should never betray. If we cannot speak in complimentary terms of our confreres in medicine, then we should hold our tongues. Some call it tolerance, but Paul in writing to the Corinthians called it charity. How truly he wrote when he said: " 'Though I speak with the tongues of men and of angels, and have no charity, I am become as sounding brass or a tinkling cymbal.'

"(6) Another responsibility of the successful doctor to his people is his duty to continue to study, to live with books, particularly medical books, and to take post-graduate courses regularly and systematically. Osler reached the peak of medical excellence in three countries and his words of wisdom have been a constant stimulus to most doctors. In one of his addresses he said:

" 'Medicine is a most difficult art to acquire. All the college can do is to teach the student principles, based on facts of science, and give him good methods of work.'

"The art of medicine is learned at the bedside of the patient, in medical libraries and in post-graduate classes and clinics. Osler again said:

" 'To study the phenomena of disease without books is to sail an uncharted sea, while to study books without patients is not to go to sea at all.' He speaks of 'the quinquennial brain dusting, at the hospital and laboratory, for renovation, rehabilitation, rejuvenation, reintegration, resuscitation.' The doctor of the future who has not time for study and refresher courses is squandering his inheritance and abetting the cause of socialistic medicine.

"(7) We come now to the most important phase of the doctor's life, the one that really tests the temper of his mind, heart and soul and the one which makes or breaks him as a successful physician in the judgment of his patients. This quality which distinguishes the good from the bad, the false from the real and the artless from the medical artist, is the manifestation of an honest and sincere attitude and interest in the personal contacts with his patients. This essential characteristic of the successful physician may be expressed in many ways. The patient presents himself to the doctor because he is in trouble and needs help of some kind. It is the doctor's responsibility to take a personal interest in his problems and to give him sympathetic understanding. One of the great teachers of American medicine, Stewart Roberts, whom many of you remember as president of the Southern Medical Association, expressed this thought beautifully as follows:

" 'It is a noble company of men and women who will touch the garments of your clinical power and breathe more than you can know the air of your character and personality. More than any other group of men, we see mankind in the average and from within outward. And we may thank God that we are neither critic nor priest, neither judge nor jury, neither financier nor office-holder, but friend of man and in a measure holder of the keys of health and life.' "

Doctors must hold fast to their ideals. Neither they nor the people they serve can afford to dispense with them.

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## BROOKINGS INSTITUTION STUDY*

"The Brooklings Institution, in a study of the cost and financing of social security released January 24, questions the financial soundness of the present social security system and of the administration's proposals for its expansion. It recommends a pay-as-you-go system in which each generation would take care of its own dependents. The study says actuaries in the Social Security Administration estimates annual benefit payments in the year 2000 at from $13,200,000,000 to $20,600,000,000 and non-government experts place the figures twice as high. The report explains mushrooming benefit costs, expanding annually for the next 50 years, may result in a burden of taxation beyond the capacity of the economy to support without a substantial increase in the price level.

"The study recommends fundamental changes in the system because of the magnitude of future costs and the uncertainties in foreign and domestic conditions confronting the nation. "The way to avoid the dilemma of the current pattern of old-age and survivors insurance, with its pseudo resemblance to private insurance, is to abandon it entirely, the report says, "In its place should be instituted a system that assumes responsibility for the full current load. Each year benefits will be paid to those in need of them and current taxpayers will supply the required funds. There will be no reserves, no level premiums, no taxes being increased according to a schedule contained in an act of congress attempting to forecast the distant future and to bind children and grandchildren."

"Lewis Meriam and Karl T. Schlotterbeck, who conducted the study for the research organization, recalled that in the early years of the century many private and municipal retirement systems went on the rocks because they had promised old-age benefits which, as the system matured, proved too costly to finance. The report said that because the present system started without any benefit load and will not take on its full load for 50 years, the present collection of taxes on all covered workers produces far more

*St. Louis Star-Times, January 25, 1950.

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**Bibliography:** 1. Loveless, M. H., and Dworin, M.: J. Am. M. Women's A. *4*:105, 1949. 2. Schiller, I. W., and Lowell, F. C.: New England J. Med. *240*:215, 1949.

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revenue than is immediately needed to pay benefits. The reserves thus created are borrowed and used by the government for current expenses, and the assets of the reserve fund are simply promises that the government at some future time will obtain the cash by one means or another and place it in the fund, the report asserted. Such reserves do not give financial security, it adds."

## NATIONAL HEALTH INSURANCE*

"Picturing the paternalistic state as destructive of freedom, Edward H. O'Connor, executive director of the Insurance Economics Society of America, February 2 warned against the extension of government compulsory insurance to embrace medical care. We are fast approaching socialization by taxation, Mr. O'Connor told the Boston Life Underwriters' Association. 'We have reached the point where the American people must make their decision whether they are to surrender to the state or to continue living as free men in the tradition of incentives and reward which dates from the nation's beginnings! . . . Proponents of the paternalistic state often say that the American people have not protected themselves against the important hazards of life and therefore it is the duty of the government to compel them to do so. Mr. O'Connor said. . . .

" 'According to latest reports, life-insurance protection in force in private companies now exceeds $213,000,000,000, covering more than 80,000,000 policy owners with total assets of over $57,000,000,000. This record is impressive proof of the determination of a large segment of the population to make provision, in the American way, for the future well-being of themselves and their families. According to the Health and Accident Underwriters Conference, more than 45,000,000 persons were covered under some form of accident and sickness insurance at the end of 1949 with a total annual premium volume exceeding $1,000,000,000. To this may be added many more millions for hospitalization coverage through Blue Cross and protection by prepayment medical plans. Roughly, if we start with the basis protection built up over a period of more than 100 years by private insurance companies and organizations and add to this the savings established through savings banks, savings and loan associations, real estate, investments, and by the purchase of savings bonds, we can total up resources committed to the protection of our people, amounting to over $300,000,000,000, which, I submit, is an amazing figure."

## THE SEMANTICS OF CANCER*

In a Treasury of Great Reporting, Rebecca West speaks of a fascist pamphlet in these striking terms: "It was as if a man walked in with his clothes held open to show a cancer." This may be a great reporting but to a cancer patient and his family, it is like being struck with a whip. The word "cancer" has become the rubber stamp which unimaginative writers use in lieu of thinking up a more descriptive term. While it does save wear and tear on the writer's brain, it's cruel reading for cancer patients.

A random sampling of a few newspapers shows the following examples of this cliche:

"Douglas told the Senate that the country's slums were a moral cancer."

"Marquand confesses that this fails to assuage the cancer of an inferiority complex."

"The Attorney General said that this cancer in the body politic should not be covered up."

"Advocating expulsion of communists from the C.I.O., Reuther said that the body politic has a cancer and that we have to save either the body or the cancer."

"Our divorce laws aggravate an already cancerous condition in our society and morals."

"The Far East is so riddled by the malignancy of poverty and ignorance as to . . ."

"Heavy sentences in the gambling cases will combat this cancerous condition in New Jersey."

"Europe cannot preserve its civilization with this cancer at its edge."

"The cancer of discrimination is a threat to the American ideal."

"The current tedency to defame public officials is a dangerously growing cancer."

Here then are ten samples, selected from newspapers within a few weeks. Do you think it took a fine comb to go through the papers and make these selections? No. A patient who had had a cancer removed picked the phrases out without half trying. To him, the word "cancer" leaps out of the printed page and hits him in the eye—and in the heart, too. With commendable courage, he has persuaded himself that cancer is not necessarily malignant, that it can be cured and that in his case, it has been cured. Must he continue to see the word flaunted daily as a symbol of hopeless malignancy?

We can do better than that. The word is a stereotype. It lacks freshness. It is overworked and inaccurate. And there are too many cancer patients in this country to permit us to sting them with this simile.

The writers who wallow in this hackneyed comparison do not intend to be cruel. They do not know what they are doing to the patient, and we must therefore forgive them. But someone must call attention to the caustic effect of their carelessly chosen cliche. They must be reminded that it is agonizingly jarring to every cancer patient and to all his loved ones. Since no one seems to have said it before, let it be said now: the word "cancer" must no longer be used as a synonym for everything nasty, malignant or corrupt. It can be a word of hope if only the writers will return it to the dictionary and use some less trite and less tormenting a term. This is surely the least they can do on behalf of one of the most gallant of our fellow-citizens—the courageous cancer patient

*Christian Science Monitor, 42:3, February 2, 1950.

*Reprinted from The Journal of the Medical Society of New Jersey, March 1950.

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# WOMAN'S AUXILIARY
## SOUTH CAROLINA MEDICAL ASSOCIATION

President: Mrs. J. L. Sanders, Greenville, S. C. Publicity Secretary: Mrs. Kirby D. Shealy, Columbia, S. C.

### TENTATIVE PROGRAM
### WOMAN'S AUXILIARY
### TO THE
### SOUTH CAROLINA MEDICAL ASSOCIATION
### MEETING HEADQUARTERS: OCEAN FOREST HOTEL
### MYRTLE BEACH, SOUTH CAROLINA
### MAY 16, 17 AND 18

TUESDAY, MAY 16th

Registration. Ocean Forest Hotel

11:00 A. M. Auxiliary committee meeting with Council of South Carolina Medical Association

4:30 P. M. Student Loan Fund Committee Meeting
Private Dining Room – Mrs. T. A. Pitts (Chr., presiding; Mrs. V. W. Brabham, Sr., Co-chr.

5:00 P. M. Executive Board Meeting
Private Dining Room – Mrs. J. L. Sanders, presiding

6:30 P. M. Executive Board Dinner – Dutch – Main Dining Room

WEDNESDAY, MAY 17th

Registration continued – Ocean Forest Hotel

9:30 A. M. House of Delegates
Private Dining Room – Mrs. J. L. Sanders, presiding

11:00 A. M. Program Meeting
Private Dining Room – Mrs. J. L. Sanders, presiding
Invocation:
Address of Welcome:
Response:
Honor Guests:
Mrs. Harold F. Wahlquest, 1st Vice President, Woman's Auxiliary to American Medical Association, Minneapolis, Minnesota.
Mrs. Robert C. Haynes, President Woman's Auxiliary to Southern Medical Association, Marshall, Missouri.

1:00 P. M. Auxiliary Luncheon – Dutch
Terrace, Ocean Forest Hotel
Guest Speakers:
Mrs. Harold F. Wahlquest, Minneapolis, Minnesota
Dr. Julian Price, Sec.-Treasurer, South Carolina Medical Association, Florence, South Carolina.

Post Convention Executive Board Meeting (to be called) Mrs. A. F. Burnside, presiding

WEDNESDAY EVENING, The South Carolina Medical Association will be host at a banquet and dance, Ocean Forest Hotel.

### MEDICAL AUXILIARY HOSTESS TO HIGH SCHOOL STUDENTS

The Woman's Auxiliary to the Columbia Medical Society entertained over 50 young high school students who attended the nurse recruitment program and tea held on February 24 at the nurses' home of the Columbia Hospital. Mrs. Nellie T. English and Miss Minier Padgette, assisted by a large number of student nurses from the Columbia Hospital were present to take the girls on an extensive tour of the hospital plant. The superintendents of nursing from all the hospitals rendered invaluable service in assisting the Auxiliary in its nurse recruitment program.

Miss Viana McCown, head of the school of nursing at the University of South Carolina, spoke to the group. She explained the three-year and five-year courses offered to student nurses. She stressed that nursing is one of the finest professions a young woman can choose.

Dr. Manly E. Hutchinson, a well known Columbia physician, spoke on the relationship of the nurse to the medical profession. He said that some of the advantages of becoming a nurse are that it gives one an independent profession, prepares a girl to become a better wife and mother and gives her the opportunity of serving other people. Mrs. W. A. Hart announced that the Auxiliary has a loan fund for student nurses and any girl desiring this aid can contact her for full particulars.

### BROADCAST

Socialized medicine was discussed on a radio program sponsored by the Columbia Auxiliary over station W I S on Saturday, April 1 from 6:45-7:00 P. M. Through the courtesy of station W I S this program appeared over their regularly featured program "For Your Information." Participants in the broadcast were Dr. Ben N. Miller, president of the Columbia Medical

# Old at Forty

## OR YOUNG AT SIXTY?

CLINICAL observation and nutritional science agree that much depends upon the diet whether the individual will be biologically old at forty or biologically young at sixty.

To extend biologic youthfulness and vigor into later years, a good nutritional state based on an adequate diet is mandatory at all times. The efficient functioning of many physiologic processes is involved in maintaining good nutrition. On the other hand, only the adequate diet can sustain these processes. To assure such dietary adequacy under many conditions of physiologic stress encountered in day to day living, a properly organized food supplement often assumes vital importance.

The *multiple-nutrient dietary food supplement* Ovaltine in milk richly provides many nutritional essentials when such supplementation is indicated. It provides excellent amounts of vitamins A and D, ascorbic acid, niacin, riboflavin and thiamine; the important minerals calcium, iron and phosphorus; and biologically complete protein. Its satisfying flavor and its easy digestibility make it widely useful in both general and special diets whether for children, adults, or the aged.

The wealth of nutrients presented by three glassfuls of Ovaltine in milk is shown in the table below.

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| CARBOHYDRATE | 65 Gm. | NIACIN | 6.8 mg. |
| CALCIUM | 1.12 Gm. | VITAMIN C | 30.0 mg. |
| PHOSPHORUS | 0.94 Gm. | VITAMIN D | 417 I.U. |
| IRON | 12 mg. | COPPER | 0.5 mg. |

*Based on average reported values for milk.

Two kinds, Plain and Chocolate Flavored. Serving for serving, they are virtually identical in nutritional content.

Society, or his appointee, and Mr. H. M. McElveen of the State Board of Health.

## COLUMBIA AUXILIARY MEETS

The regular meeting of the Woman's Auxiliary to the Columbia Medical Society was held on March 14 at eleven o'clock in the Columbia Country Club. Mrs. William Weston, Jr., president, presided.

Notable among the officers' reports was the announcement by Mrs. H. H. Plowden, treasurer, that the membership is greater than it has ever been since the organization, there being 124 active members.

At the conclusion of the business Mrs. Izard Josey, program chairman, introduced Dr. Hilla Sheriff, director of maternal and child health for the state of South Carolina and director of the division for crippled children. Dr. Sheriff is a graduate of the Medical College in Charleston, holds a degree of Master of Public Health from Harvard, has practiced pediatrics in Spartanburg, and since 1931 has been connected with maternal and child health services.

In her talk Dr. Sheriff pointed out that South Carolina has reduced the number of maternal deaths since 1936 at which time our state had one of the highest rates. This improvement was due to a five year study made by the Medical Association in which it was found that 90% of the deaths were due to the lack of prenatal care. Since then the state health department has provided care for those who could not otherwise get it, and has put on an intensive education program for colored mid-wives who deliver 1/3 of the babies born in South Carolina. Dr. Sheriff's talk was illustrated with slides showing that the nurses had to ride in Jeeps, boats, and even walk to get to their patients. Other interesting slides showed the conditions of poverty the patients were in and that they came to the clinics in boats, trucks, wagons, on mule back, bicycle, and foot.

At one o'clock lunch was served from tables decorated with spring flowers and minature Dutch windmills.

## ATTENTION, LEGISLATIVE CHAIRMEN!

A communication from National Education Campaign headquarters in Chicago informs us that a series of radio talks and public platform speeches is available for our immediate use. They are:

1. A 20-minute talk for a medical leader addressing a medical society, outlining accomplishments and objectives of the campaign but is designed for use before medical or auxiliary groups.
2. A 13-minute radio talk or public platform speech. This is written to allow 2 minutes on a 15-minute radio program for an introduction and a closing announcement. (R-4)
3. A 4-1/2-minute radio talk, or brief public audience speech. (R-5)
4. A 3-minute talk for radio or quickie service club appearances. (R-6)

Your state Legislative Chairman has a single copy of each of the above-listed talks which she will be glad to furnish you upon request. Please order by the form number indicated.

A series of 5-minute radio talks, each slanted to a particular group in the community, i.e., women, veterans, farmers, teen-agers, labor, middle-bracket income groups, church people, etc. is now in preparation and should be ready for use by April 1. These talks will be available in two forms: (1) recorded, ready for radio presentation, with only the message of the sponsoring group to be dubbed in; (2) mimeographed, for distribution to your own speakers.

Step up interest in your local campaign by making use of this material. For further information write your state Legislative Chairman.

Mrs. Manly E. Hutchinson
State Legislative Chairman

## MRS. J. L. SANDERS, PRESIDENT OF S. C. MEDICAL AUXILIARY, GUEST SPEAKER AT EDISTO MEDICAL AUXILIARY MEETING

The Edisto Medical Auxiliary met for a delightful luncheon meeting at the home of Mrs. Wells Brabham on Boulevard Extension.

After a delightful luncheon Mrs. A. L. Black, the president of Edisto Medical Auxiliary, presented Mrs. Adcock who in her own winsome style introduced the speaker for the afternoon, Mrs. Sanders.

Mrs. Sanders spoke most interestingly of her trip to the Chicago conference and told of the great opportunity to serve which faces the auxiliary. She touched briefly on the beginning of the organization and the activities of the various committees. She urged the members to stress the new project "Maternal Welfare."

At the short business meeting the following committees for Doctor's Night were named: Mrs. Neil Price, chairman, Mrs. Richard Horger, Mrs. G. P. Cone and Mrs. H. Marcus.

## DOCTORS' WIVES HEAR ATTACK UPON SOCIALIZED MEDICINE

Socialized medicine is gaining a "foothold" in the U. S., Mrs. Bruce Schaefer of Toccoa, Ga., told the Anderson Medical Auxiliary.

Mrs. Schaefer is the American Medical Association Auxiliary's chairman. She is the wife of Dr. Bruce Schaefer of Toccoa.

"THIS NEW way of life," she charged, "is being sold to us by politicians, federal officials and labor leaders."

"This new security, so we are told against the hazards of life, is to be obtained by the simple expedient of paying 20 to 25 per cent of our income to the federal government in return for which everyone will receive free medical care and cash benefits when we are sick, unemployed, or totally disabled."

Mrs. Schaefer said persons working for government medicine have been moving into such agencies as the Labor Department, the Social Security Board, the U. S. Public Health Service and the Department of Agriculture.

"THEY FORMED a propaganda machine for the nationalization of medicine," she claimed.

Should socialized medicine be adopted in this country, Mrs. Schaefer said there would be a change from the present fee-for service payment to full-time salaried service; the gradual abolition of the private practice of medicine and dentistry; the gradual abolition of individual practice; complete and absolute regimentation of patients and of health and medical personnel; and government control of all funds to be expended for health and medical services.

"Persons will be required to select their doctors in advance of the time they are sick," she said, "and they will be compelled to go to doctors in several areas. In time everyone would be compelled to go to public health centers or clinics."

MRS. SCHAEFER was introduced by Mrs. Bruce Swain of Anderson. Mrs. Sam Pruitt, president of the Auxiliary, presided. Refreshments were served.

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# ABSTRACTS

**Nyswander, M.: Withdrawal Treatment of Drug Addiction. New England J. of Med. 242: 128, Jan. 26, 1950.**

The author's purpose is to present a plan of withdrawal treatment that may be utilized by the physician in general practice.

The amount of drug to which the patient has been accustomed is of little importance in withdrawal. Most drug addicts are also addicted to barbiturates in quantities ranging from 1 to 50 gr. daily. Morphine withdrawal should begin first and then later barbiturate withdrawal. Two weeks suffice for the complete withdrawal of barbiturates.

To insure the success of withdrawal treatment the patient should be hospitalized. Morphine may be substituted equally well for the synthetic narcotics or opium derivatives. It should not be substituted in patients primarily addicted to demerol or codeine. In the beginning, doses of morphine of 1/4 gr. or 1/2 gr. given four times a day, twenty minutes before meals and at bedtime, usually suffice. Every two days dosages are cut. The first change is to alternate morphine 1/8 gr. with 1/4 gr. The second change is 1/8 gr. four times a day. This is then alternated with 1 gr. of codeine, which is finally cut to 1/2 gr. codeine four times a day. Finally the codeine is alternated with thiamin until all hypoderimcs are discontinued. For the patient who is also taking some 15 gr. of nembutal a day, start with 1-1/2 gr. three times a day and 3 gr. at bedtime. This should be maintained two or three days and then the daytime dosages progressively eliminated. Then substitute chloral hydrate for the evening dosage and finally withdraw this. Symptomatic therapy with atropine and belladonna for nausea and vomiting, bismuth for diarrhea, hot tubs for muscular aches, vitamins for undernourishment, is also recommended.

# DEATHS

## GEORGE H. BUNCH

Dr. George H. Bunch, 70, died suddenly at the Columbia Hospital where he had gone to attend a staff meeting, on March 6. (See editorial page of this issue for a tribute to this outstanding surgeon and medical leader.)

## CHARLES D. JACOBS

Dr. Charles D. Jacobs, 73, died in Kingstree on February 26, following a long illness.

A native of Kingstree, Dr. Jacobs received his medical education at the Nashville Medical College (1903). Soon after graduation he returned to his home where he engaged in general practice. During World War I he served with the medical corps of the Army, retiring with the grade of Major.

He volunteered again in World War II but his age prevented his entry into the armed forces.

Dr. Jacobs is survived by his widow, the former Miss Banna Wilkina, and three sons.

## ROBERT B. GANTT

Dr. Robert Brodie Gantt. 58, died in Charleston on February 24, after a long illness.

A graduate of the Medical College of the State of South Carolina (1914), Dr. Gantt specialized in the field of urology and was for many years head of the out-patient department at his alma mater. He resigned this position two years before his death.

He is survived by his widow, the former Miss Helen Beaumont, two sisters and a brother.

## CHARLES T. BULLOCK

Dr. Charles T. Bullock, 53 died suddenly in Mullins on February 24.

A native of North Carolina, Dr. Bullock attended Campbell College (N. C.), the University of South Carolina, and was graduated from the Medical College of the State of South Carolina in 1926. Following postgraduate work in New York, he opened an office for practice in Columbia, devoting most of his time to surgery. In 1939 he moved to Mullins where he continued his surgical work. He was a Fellow of the American College of Surgeons.

Dr. Bullock is survived by his widow, the former Miss Lucy Elizabeth Teague, one daughter and one son.

## MacWILLIAMS W. WEBB

Dr. Mac Webb, 63, died at his home in Wagener recently following a long illness.

A native of Anderson County, Dr. Webb received his medical education at the Medical College of the State of South Carolina (Class of 1911). Soon after graduation he located in Wagener where he carried on his work as a general practitioner. A family doctor of the old school, he was popular both as a physician and a citizen.

He is survived by his widow, Mrs. Annie F. Webb, and one son.

## LINNEAUS C. SHECUT

Dr. L. C. Shecut, 74, died recently at the Tri-County Hospital in Orangeburg after a long illness.

A native of Augusta, Georgia, Dr. Shecut received his medical education at the University of Maryland Medical School and at the University of Georgia Medical School (class of 1901), where he was valedictorian of his class. Soon after graduation he located in Orangeburg where he was engaged in active practice up until the time of his retirement. For forty years he served as physician for the South Carolina State Agricultural and Engineering College in Orangeburg and also served on the city school board. He served with the armed forces during World War I, as a captain in the medical corps.

Loved by all, Dr. Shecut was the recipient of a

special testimonial dinner given by his colleagues in 1948, at which time he was presented with a gold medal "for outstanding leadership in the practice of medicine."

Dr. Shecut is survived by his widow, the former Miss Blanch Dukes, a daughter, and a son, Dr. James C. Shecut of Orangeburg.

**Physician interested in practicing temporarily somewhere in South Carolina, July through December 1950. Answer to Dr. J. D. Ruff, Charity Hospital, New Orleans, La.**

## NEWS ITEMS

Dr. Robert Wilson Ball, State Board of Health, has recently been certified by the newly created American Board of Preventive Medicine and Public Health. He was admitted as one of the Founder's Group because of "at least ten years of distinguished service in the field of public health," thus escaping the necessity for entrance examination.

We join with his friends in congratulating Dr. Ball on this attainment.

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Dr. Fred H. Fellers has opened an office in Columbia where his practice will be limited to general surgery.

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Dr. Charles B. Thomas has announced the opening of an office for the practice of orthopedic surgery in Greenville.


# ANNUAL MEETING

# MAY 16-17-18

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